Pioneer sound.vision.soul

Service Manual

PDX-Z9

ORDER NO.
RRV3755

SUPER AUDIO CD RECEIVER

PDX-Z9

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDX-Z9	WYVSXJ5	AC 220 V to 240 V	

For details, refer to "Important Check Points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
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SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trainedto properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING !

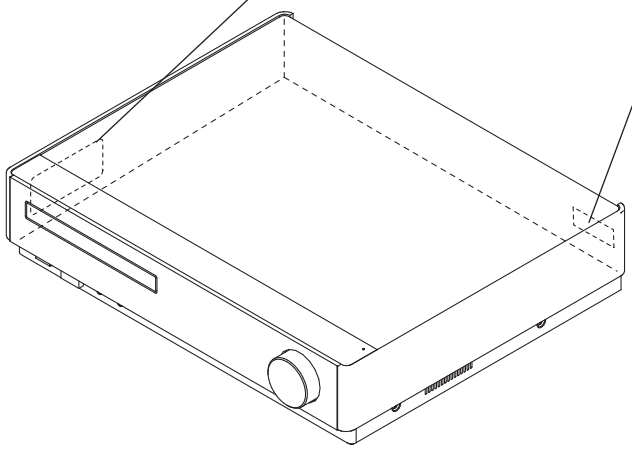
THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

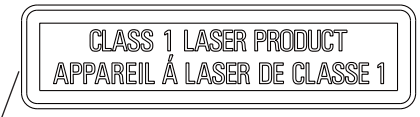
LASER DIODE CHARACTERISTICS

FOR CD : MAXIMUM OUTPUT POWER : 7 mW Continuous
WAVELENGTH : 780 nm
FOR SACD :MAXIMUM OUTPUT POWER : 5 mW Continuous
WAVELENGTH : 650 nm

LABEL CHECK

PRW1608





(Printed on the Rear Panel)

Additional Laser Caution

1. Laser Interlock Mechanism
   • Loading switch (S101 on the LOAB Assy) is used for interlock mechanism of the laser.
   When this switch turned ON in SW2 (CLOSE) side (OPEN signal is 0V and CLOSE signal is 3.5V), a laser becomes the status which can completely oscillation.
   Furthermore, the laser completely oscillates in the disc judgment and disc playback.
   When player is power ON state and laser diode is not completely oscillating, 780nm laser diode is always oscillating by half power.
   • Laser diode is driving with Q307 (650nm LD) and Q308 (780nm LD) on the DVDM Assy.
   Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
   • In the test mode *, there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.
   The interlock mechanism mentioned above becomes invalid in this mode.

2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

* : Refer to page 47.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 ºC.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ºC in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

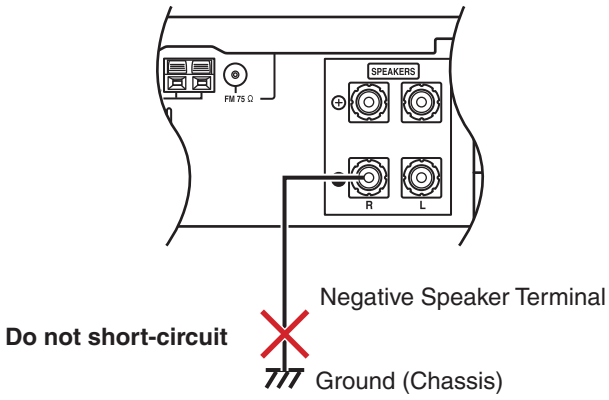
Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

1.2 NOTES ON BTL DRIVE

As a signal to drive the BTL is output from the negative speaker terminal, DO NOT short-circuit between the negative speaker terminal and ground, such as the chassis.



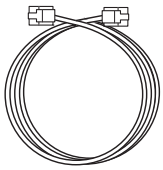
5 6 7 8

2. SPECIFICATIONS

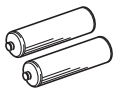
2.1 ACCESSORIES

• Remote control (AXD7523)

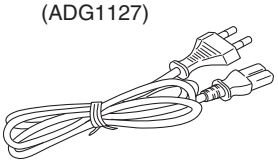
• LAN Cable
(VDE1098) L=2.0m



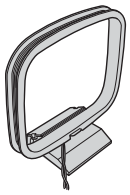
• AA/R6 dry cell batteries
(to confirm system operation) x2



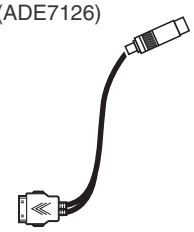
• AC Power cord x1
(ADG1127)



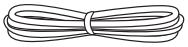
• AM loop antenna x1
(ATB7013)



• iPod Control Cable
(ADE7126)



• FM antenna x1
(ADH7030)



• Warranty card
• Operating Instructions
• iPod Caution Card

2.2 SPECIFICATIONS

- **Amplifier section**

RMS Power Output . . . . . 50 W + 50 W
(1 kHz, 10 % T.H.D., 4 Ω)
Continuous Power Output . . . . . 40 W + 40 W
(20 Hz to 20 kHz, 1.0 % T.H.D., 4 Ω)

- **FM tuner section**

Frequency range . . . . . 87.5 MHz to 108 MHz
Antenna . . . . . 75Ω, unbalanced

- **AM tuner section**

Frequency range . . . . . 531 kHz to 1602 kHz
Antenna . . . . . .Loop antenna

- **Network section**

LAN terminal . . . . . Ethernet jack
10BASE-T/100BASE-TX

- **Other connectors**

Power supply
USB connector . . . . . 5 V, 500 mA
iPod connector. . . . . 5 V, 500 mA

- **Miscellaneous**

Power requirements . . . . . AC 220 V to 240 V, 50 Hz/60 Hz
Power consumption . . . . . 47 W
Power consumption in standby . . . . . 0.4 W
Dimensions . . . . . 386 mm (W) x 88 mm (H) x 347 mm (D)
Weight . . . . . 5.0 kg

- **Accessories**

Remote control 1
AA/R6 dry cell batteries (to confirm system operation) 2
AM loop antenna 1
FM wire antenna 1
iPod control cable (for use with this unit only) 1
LAN cable 1
Power cord 1
Warranty card 1
operating instructions

Note

• Specifications and design subject to possible modification without notice, due to improvements.

2.3 DISC CONTENT FORMAT

Disc / content format playback comptibility

This receiver is compatible with a wide range of audio disc types and media formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CDs, may be in an unplayable format—see the Disc compatibility table below for further compatibility information. Please also note that recordable discs cannot be recorded using this receiver.

Audio CD

CD-R

CD-RW

Super Audio CD

Disc comptibility table

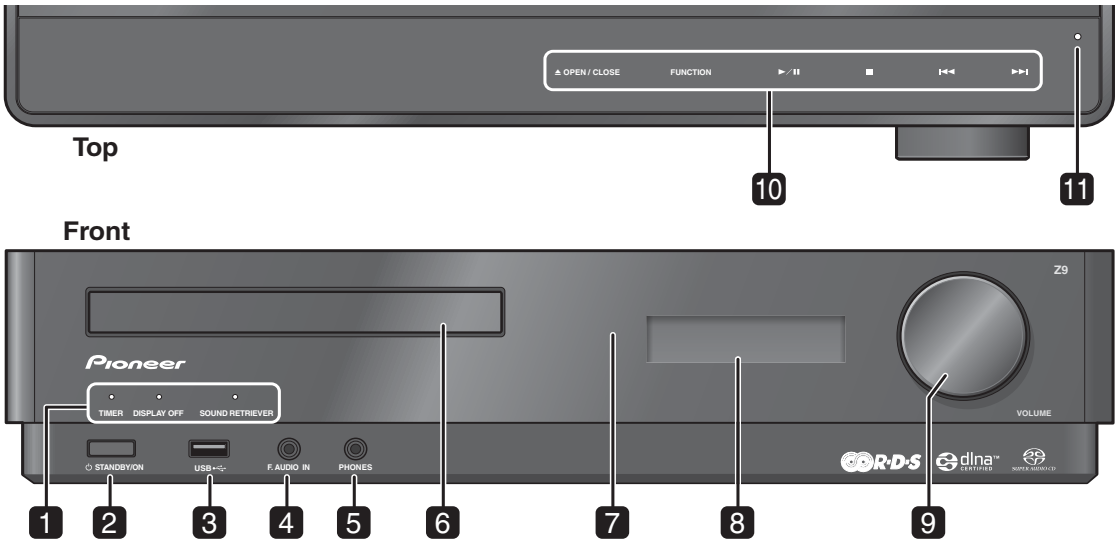
Media	Compatible formats
CD-R/RW	・CD-Audio, ISO 9660 CD-ROM* * ISO 9660 Level 1 or 2 compliant. CD physical format: Mode1, Mode2 XA Form1. Romeo and Joliet file systems are both compatible. ・Multi-session playback: No ・Unfinalized disc playback: No
Compressed audio	・MPEG-1 Audio Layer 3 (MP3), Windows Media Audio (WMA) ・Sampling rates: 44.1 kHz ・Bit-rates: Any (128 kbps or higher recommended) ・VBR (variable bit rate) playback: No ・WMA lossless encoding: No ・DRM (Digital Rights Management) compatible: Yes (DRM-protected audio files will not play in this player). ・File extensions: .mp3, .wma (these must be used for the player to recognize MP3/WMA files) ・File structure (may differ): Up to 299 folders on a disc; up to 648 folders and files (combined) within each folder
PC-created disc	・Discs recorded using a PC may not be playable due to the setting of the software used to create the disc. In these instances, check the software manual or disc boxes for more on compatibility. ・Discs recorded in packet write mode are not compatible.

About DualDisc playback

A DualDisc is a new two -sided disc, one side of which contains DVD content video, audio, etc. while the other side contains non-DVD content such as digital audio material.
The non-DVD, audio side of the disc is not compliant with the CD Audio specification and therefore may not play.
The DVD side of a DualDisc plays in this product. DVD-Audio content will not play.
For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

2.4 PANEL FACILITIES

Front / top panel



Front

1 TIMER indicator
Displays the timer operation status.

DISPLAY OFF indicator
Lights when the front panel display is turned off.

SOUND RETRIEVER indicator
Lights when Sound Retriever is active.

2 ⏻ STANDBY/ON
Press to switch the receiver on/into standby.

3 USB interface
Connect a USB audio device for playback.

4 F.AUDIO IN jack
To listen to audio from an external component, connect with a stereo mini-plug cable. Once connected, the input automatically changes to **FRONT AUDIO IN**.

5 PHONES jack
Use to connect headphones. When the headphones are connected, there is no sound output from the speakers.

6 Disc tray

7 IR remote sensor

8 Front panel display
Displays various control functions.
If no operations are carried out for three minutes, the colors of the display reverse.

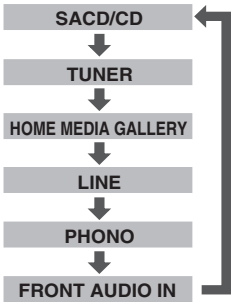
9 VOLUME dial

Top

10 Touch sensor
Lightly touch the center of displayed words or marks to control operations.

▲ OPEN/CLOSE
Opens/closes the disc tray.

FUNCTION
Switches between functions as displayed below:



►/II
Starts playback/stops.

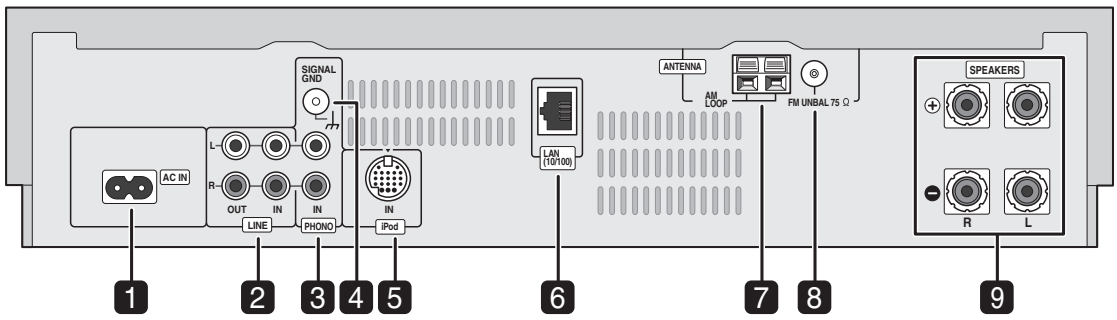
■
Stops playback.

I◄◄
Skips to the start of the current track, then to previous tracks.

►►I
Skips to the next track.

11 Action indicator
Lights when a touch sensor operation is performed.

Rear panel



1 AC IN - Power inlet
Connect the supplied power cable.

2 LINE IN/OUT jacks
Connect an external component. To listen to components connected to the **LINE IN** jack, press **INPUT** on the remote control to select **LINE**.

3 PHONO IN jacks
Connect a turntable. To listen to audio from a connected turntable, press **INPUT** on the remote control to select **PHONO**.

4 SIGNAL GND terminal
If your turntable has a grounding wire, connect it here to reduce undesired sounds.

5 iPod IN terminal
Connect the provided iPod control cable here.

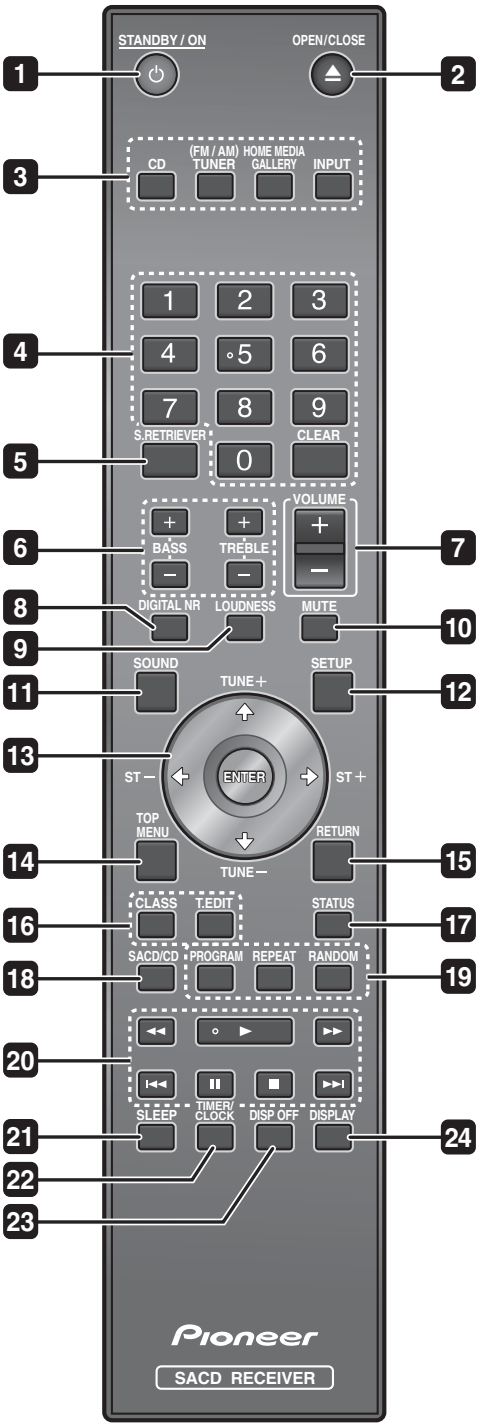
6 LAN (10/100) terminal
Use LAN cable to connect to network.

7 AM LOOP antenna terminal
Connect provided AM loop antenna here.

8 FM antenna socket
Connect provided FM antenna here.

9 SPEAKERS terminals
Connect provided speakers here.

Remote control



1 ⏻ STANDBY/ON
Press to switch the receiver on/into standby.

2 ⏏ OPEN/CLOSE

3 Function select button

CD
Press to listen to CDs and SACDs.

(FM/AM) TUNER
Press to select the built-in radio tuner.

HOME MEDIA GALLERY
Press to listen to music from an iPod, USB memory device, internet radio, or audio components on the network in Home Media Gallery.

INPUT
Press repeatedly to select one of the receiver's audio inputs (**LINE**, **PHONO**, **FRONT AUDIO IN**).

4 Number buttons
Use to enter a track number or radio station.

5 S.RETRIEVER
Press to restore CD quality sound to compressed audio sources.

6 BASS +/–, TREBLE +/–
Use the bass and treble controls to adjust the overall tone.

7 VOLUME +/–
Use to set the listening volume.

8 DIGITAL NR
May improve the quality of sound for noisy sources.

9 LOUDNESS
Press to enable the Loudness function.

10 MUTE
Mutes/unmutes the sound.

11 SOUND
Press to switch the Sound mode.

12 SETUP
Press to make various settings.

13 ⬆⬇⬅➡(TUNE +/–, ST +/–), ENTER
Use to select/switch system settings and modes, and to confirm actions.

Use **TUNE +/–** to find radio frequencies and use **ST +/–** to find preset stations.

14 TOP MENU
Press to display the Category screen from Home Media Gallery.

15 RETURN
Use to cancel settings.

16 Internet radio controls

CLASS
Switches between the three banks of radio station presets.

T.EDIT
Memorizes stations for recall.

17 STATUS
Press to confirm audio settings.

18 SACD/CD
Use to access SACD setup.

19 PROGRAM
Use to program the order of songs to be played back from a SACD/CD, or to register favorites for Home Media Gallery.

REPEAT
Press to repeat a song playing from a SACD/CD or in Home Media Gallery.

RANDOM
Press to randomize the order of songs played back from a SACD/CD or in Home Media Gallery.

20 Playback controls

▶
Press to start playback.

II
Press to pause playback.

■
Press to stop playback.

◀◀
Press to start fast reverse scanning.

▶▶
Press to start fast forward scanning.

I◀◀
Skips to the start of the current track, then to previous tracks.

▶▶I
Skips to the next track.

21 SLEEP
Use to put the receiver in sleep mode and select the amount of time before sleep.

22 TIMER/CLOCK
Use for setting the clock, as well as for setting and checking the timers.

23 DISP OFF
Use to turn the front panel display off.

24 DISPLAY
Press to change the display for songs playing back from SACD/CD or Home Media Gallery.

Press to change the display for RDS information in the FM band.

3. BASIC ITEMS FOR SERVICING
3.1 CHECK POINTS AFTER SERVICING

Check points after servicing (CD RECEIVER)

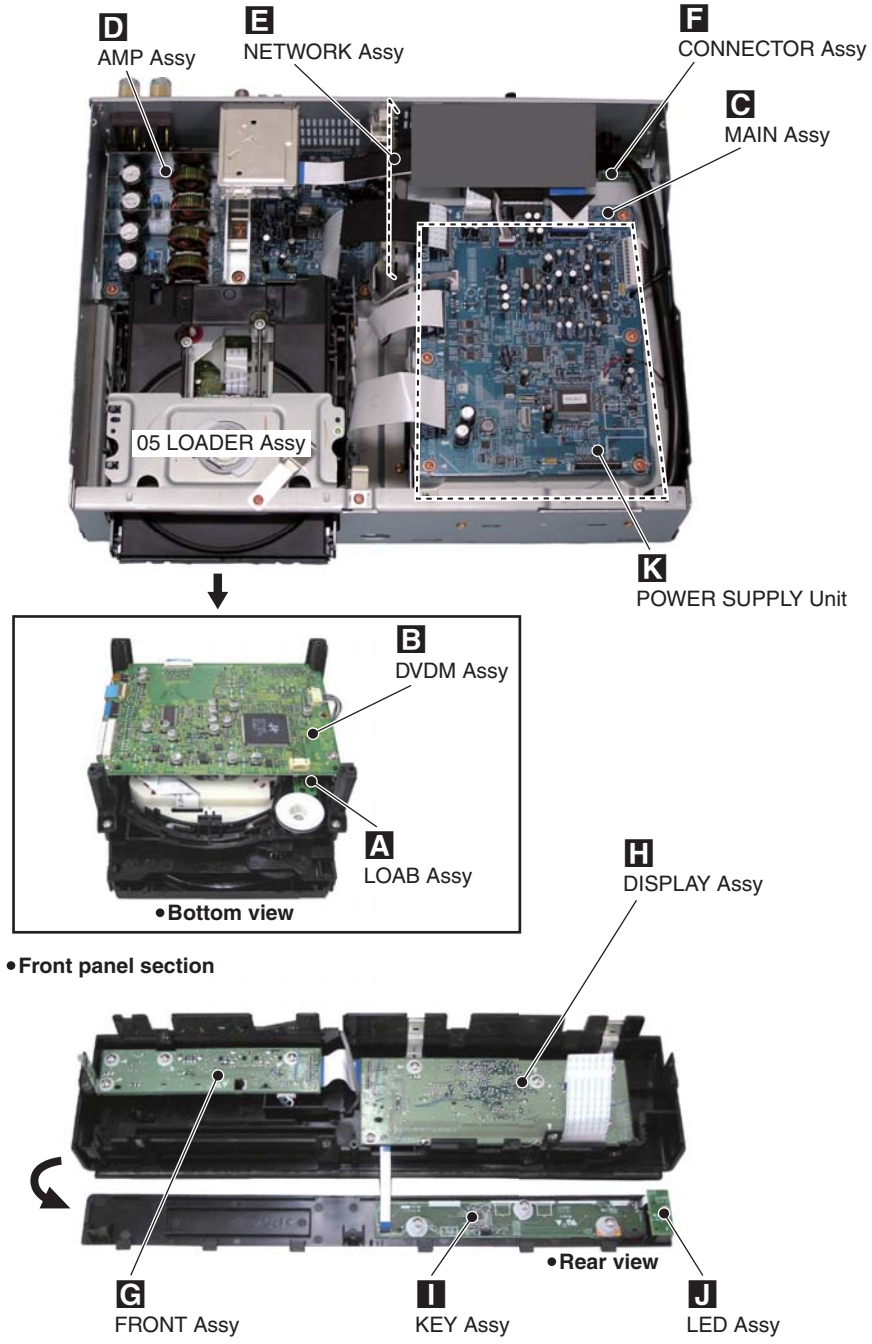
To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedure	Check points
1	Confirm the firmware version on Service Mode.	The version of the firmware must be latest. Update firmware to the latest one, if it is not the latest.
2	Confirm whether the customer complain has been solved. If the customer complain occurs with the specific disc, use it for the operation check.	The customer complain must not be reappeared. Audio and operations must be normal.
3	Confirm playback error rates at the innermost and outermost tracks by using the following disc. DVD test disc (GGV1025)	The error rates must be less than 5.0e-4. It can be confirmed if the Drive is degraded.
4	Play back a CD. (track search)	Audio and operations must be normal.
5	Play back a SACD. (track search)	Audio and operations must be normal.
6	Check the tuner (AM and FM) operations.	Audio and operations must be normal.
7	Check the sound from headphone output.	Sound must be normal, without noise.
8	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

3.2 PCB LOCATIONS



LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.
NSP	1..LOAB ASSY	VWG2346
	1..DVDM ASSY	AWM8099
	1..MAIN ASSY	AWM8112
	2..MAIN ASSY	AWU8322
	2..AMP ASSY	AWU8326
	1..NETWORK ASSY	AWX9240

Mark	Symbol and Description	Part No.
	1..COMPLEX ASSY	AWM8109
	2..CONNECTOR ASSY	AWU8319
	2..FRONT ASSY	AWU8321
	2..DISPLAY ASSY	AWU8328
	2..KEY ASSY	AWU8329
	2..LED ASSY	AWU8330
⚠	1..POWER SUPPLY UNIT	AWR7050
	1..FM/AM TUNER UNIT	AXX7248

3.3 JIGS LIST (INCLUDE GREASE)

■ Jigs list

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	adjustment, diagnosis
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
CD Test Disc	STD-905	Check of CD
Cable for service (17P)	GGF1157	Diagnosis of DVDM ASSY
Cable for service (5P)	GGD1425	Diagnosis of DVDM ASSY (SIDE B)

■ Lubricants and Glues list

Name	Lubricants and Glues No.	Remarks
Lubricating Oil	GYA1001	Refer to "9.4 05 LOADER ASSY" and "9.5 TRAVERSE MECHANISM ASSY-S"
Daifree	GEM1036	Refer to "9.4 05 LOADER ASSY"
Silicone Adhesive	GEM1037	Refer to "9.5 TRAVERSE MECHANISM ASSY-S"
Screw tight	GYL1001	Refer to "8.1.5 MECHANISM ADJUSTMENT"

■ CLEANING

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

A

B

C

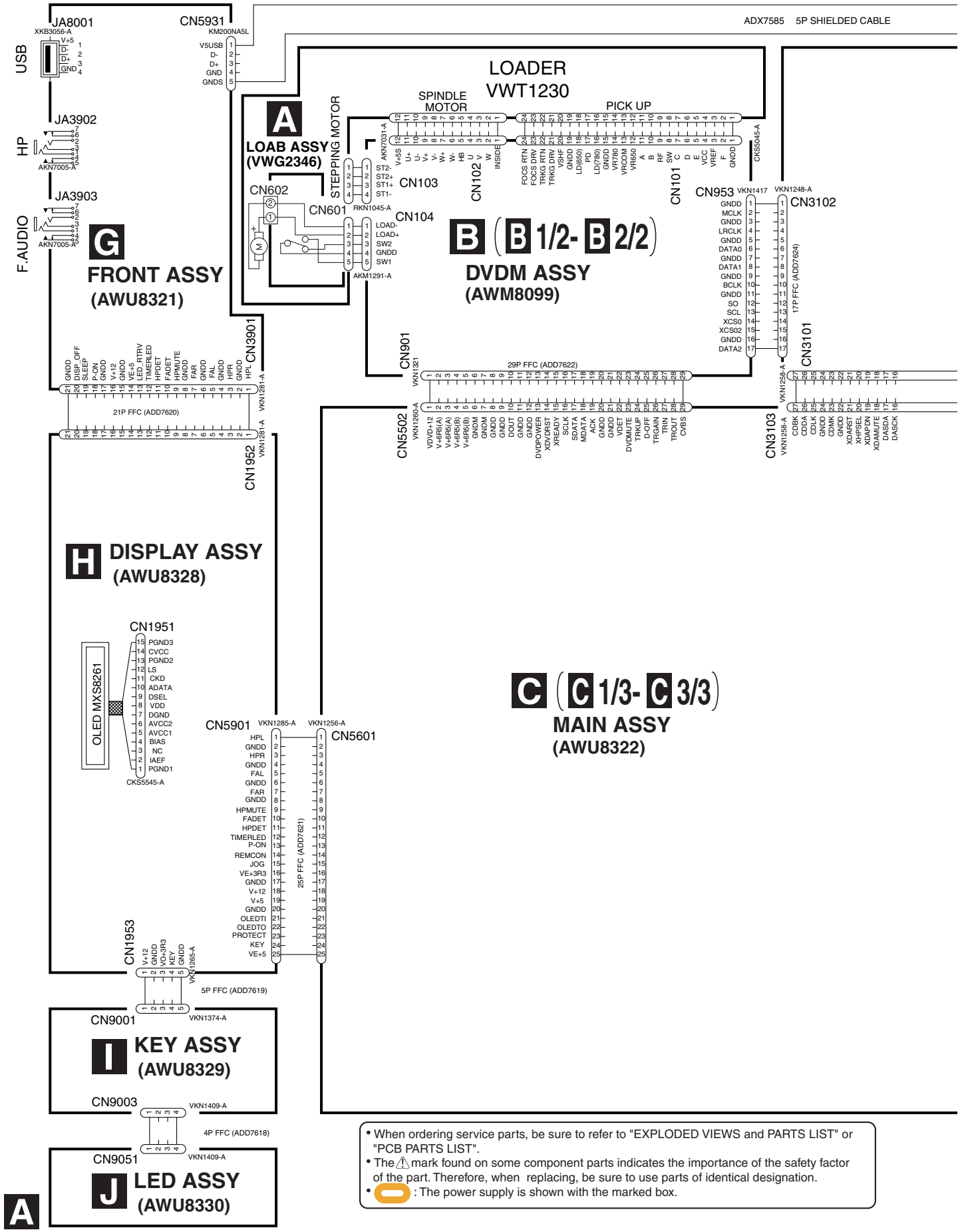
D

E

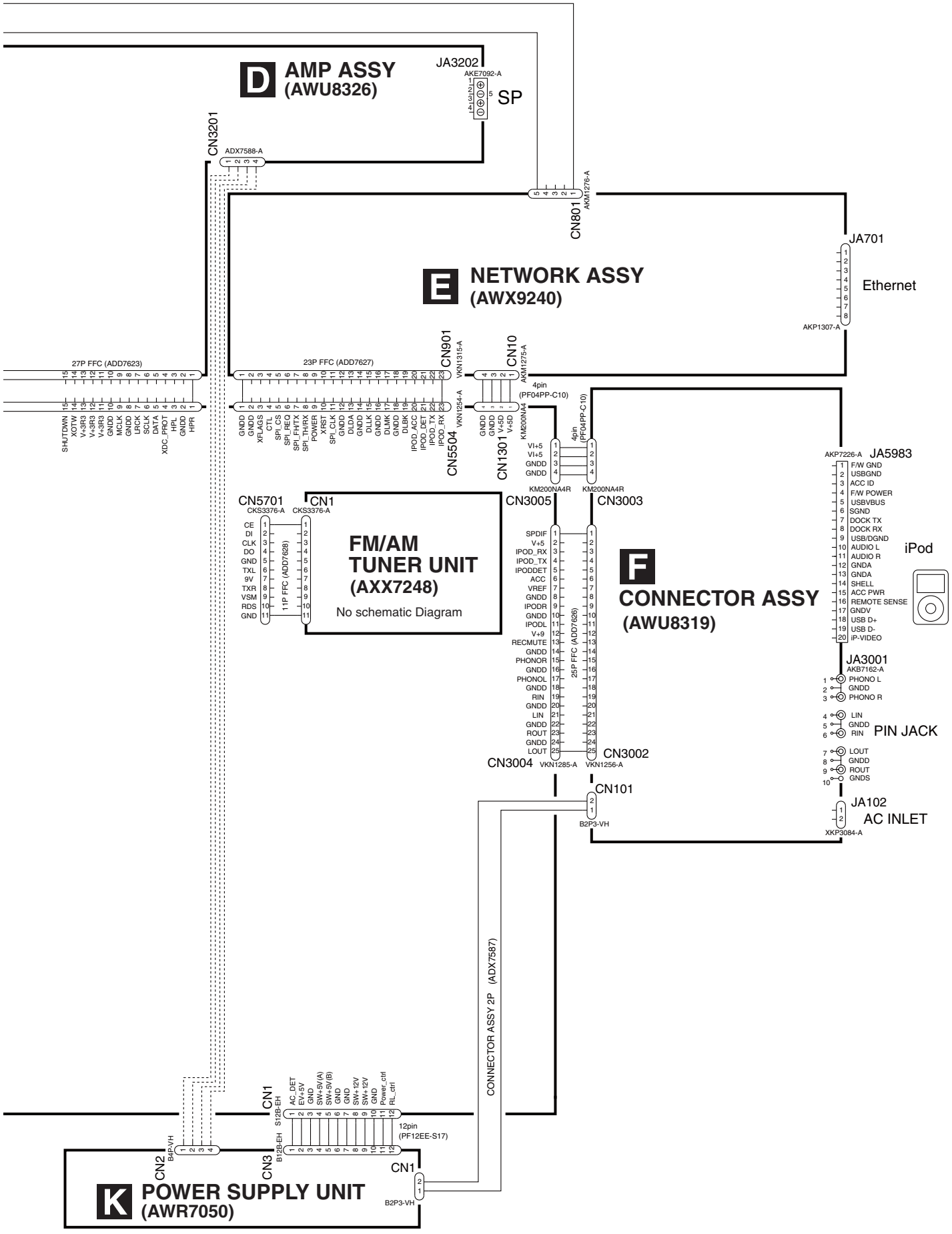
F

4. BLOCK DIAGRAM

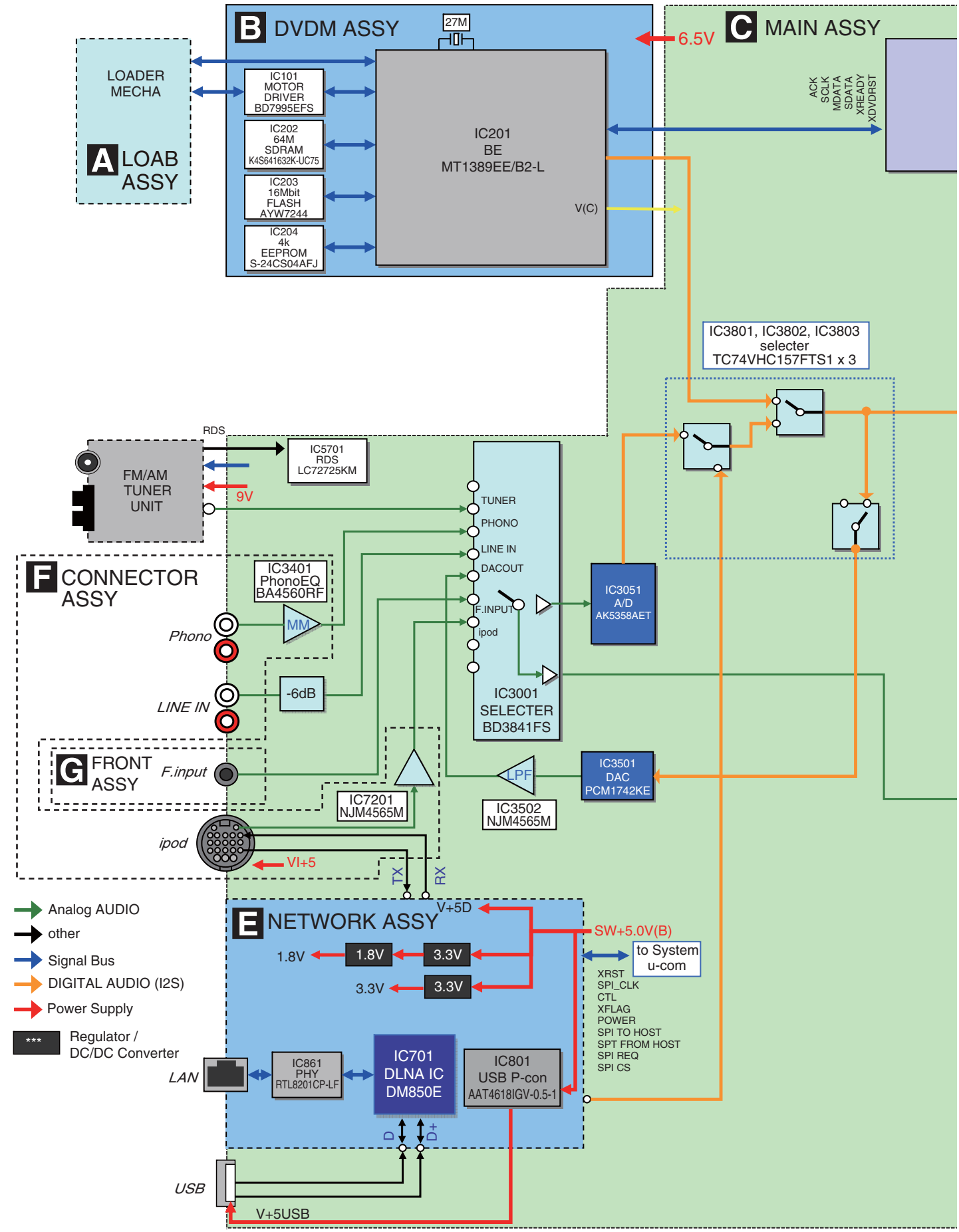
4.1 LOAB ASSY and OVERALL WIRING DIAGRAM

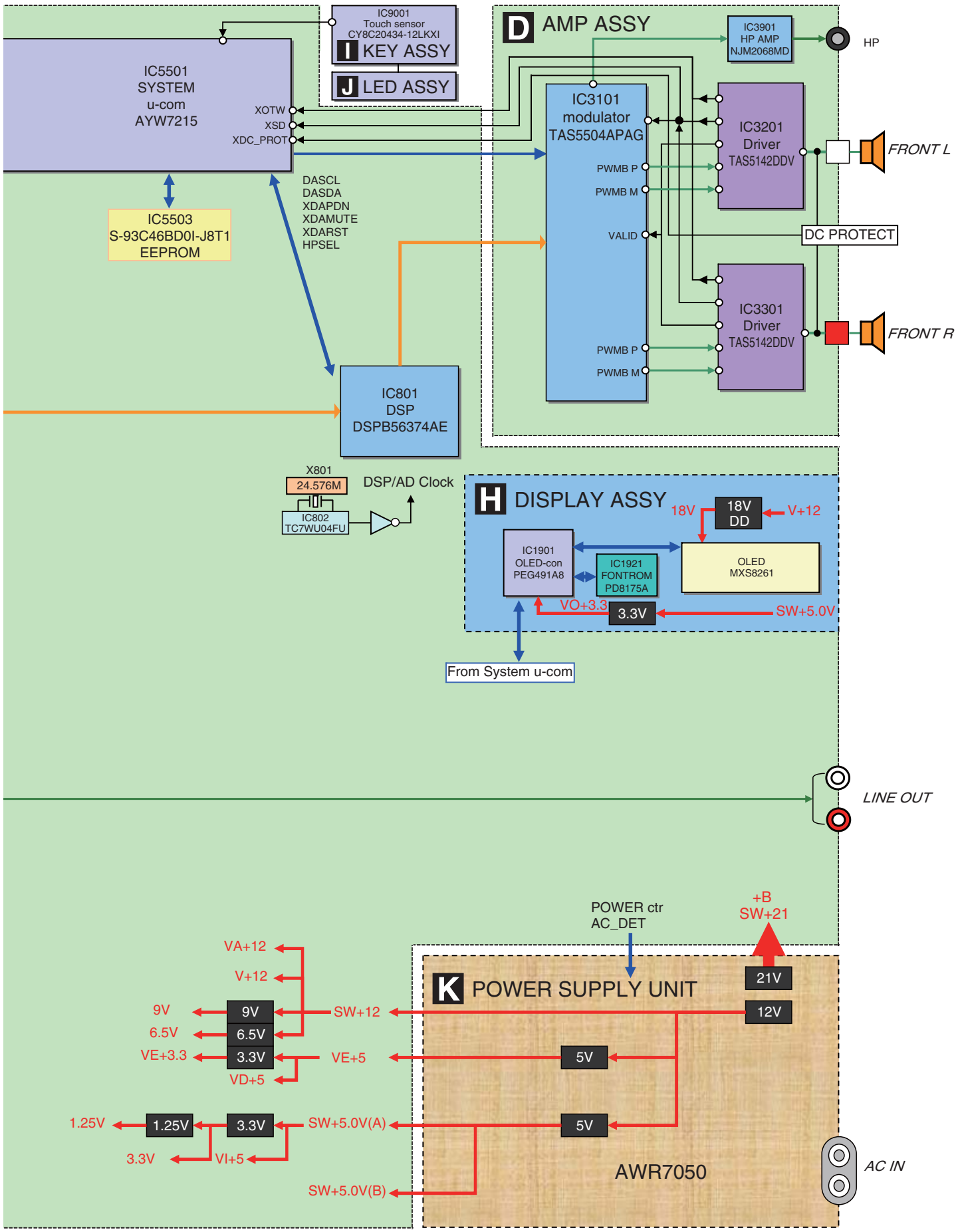


- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- : The power supply is shown with the marked box.


D AMP ASSY (AWU8326)
JA3202
AKE7092-A
SP
CN3201
ADX7588-A
CN801
AKM1276-A
E NETWORK ASSY (AWX9240)
JA701
Ethernet
AKP1307-A
27P FFC (ADD7623)
23P FFC (ADD7627)
CN901
VKN1315-A
CN10
AKM1275-A
CN5504
VKN1254-A
4pin (PF04PP-C10)
KM200NA4
CN1301
KM200NA4R
CN5701
CKS3376-A
CN1
11P FFC (ADD7628)
FM/AM TUNER UNIT (AXX7248)
No schematic Diagram
CN3005
CN3003
25P FFC (ADD7626)
F CONNECTOR ASSY (AWU8319)
AKP7226-A
JA5983
iPod
JA3001
AKB7162-A
PIN JACK
CN3004
VKN1285-A
CN3002
VKN1256-A
CN101
B2P3-VH
JA102
AC INLET
XKP3084-A
CONNECTOR ASSY 2P (ADX7587)
CN2
B4P-VH
CN3
B12B-EH
S12B-EH
12pin (PF12EE-S17)
CN1
B2P3-VH
K POWER SUPPLY UNIT (AWR7050)

4.2 OVERALL BLOCK DIAGRAM




IC9001
Touch sensor
CY8C20434-12LKXI
I KEY ASSY
J LED ASSY
IC5501
SYSTEM
u-com
AYW7215
XOTW
XSD
XDC_PROT
IC5503
S-93C46BD0I-J8T1
EEPROM
DASCL
DASDA
XDAPDN
XDAMUTE
XDARST
HPSEL
D AMP ASSY
IC3901
HP AMP
NJM2068MD
HP
IC3101
modulator
TAS5504APAG
PWMB P
PWMB M
VALID
IC3201
Driver
TAS5142DDV
FRONT L
DC PROTECT
IC3301
Driver
TAS5142DDV
FRONT R
IC801
DSP
DSPB56374AE
X801
24.576M
IC802
TC7WU04FU
DSP/AD Clock
H DISPLAY ASSY
18V
18V
DD
V+12
IC1901
OLED-con
PEG491A8
IC1921
FONTROM
PD8175A
OLED
MXS8261
VO+3.3
3.3V
SW+5.0V
From System u-com
LINE OUT
POWER ctr
AC_DET
+B
SW+21
VA+12
V+12
9V
6.5V
VE+3.3
VD+5
SW+12
VE+5
K POWER SUPPLY UNIT
21V
12V
5V
5V
1.25V
3.3V
SW+5.0V(A)
3.3V
VI+5
SW+5.0V(B)
AWR7050
AC IN

5. DIAGNOSIS

5.1 METHOD FOR DIAGNOSING DEGRADATION OF THE LDS ON THE PICKUP ASSY

Case when this diagnosis is required :
When playback of any disc, including a test disc (DVD: GGV1025, CD: STD-905), won't play or doesn't play

How to diagnose

In the case mentioned above, degradation of the laser diodes (LDs) mounted on the 05SD Pickup Assy is suspected. Measure the voltage between the two ends of one of the resistors mentioned below.

- **No playback of a CD :**

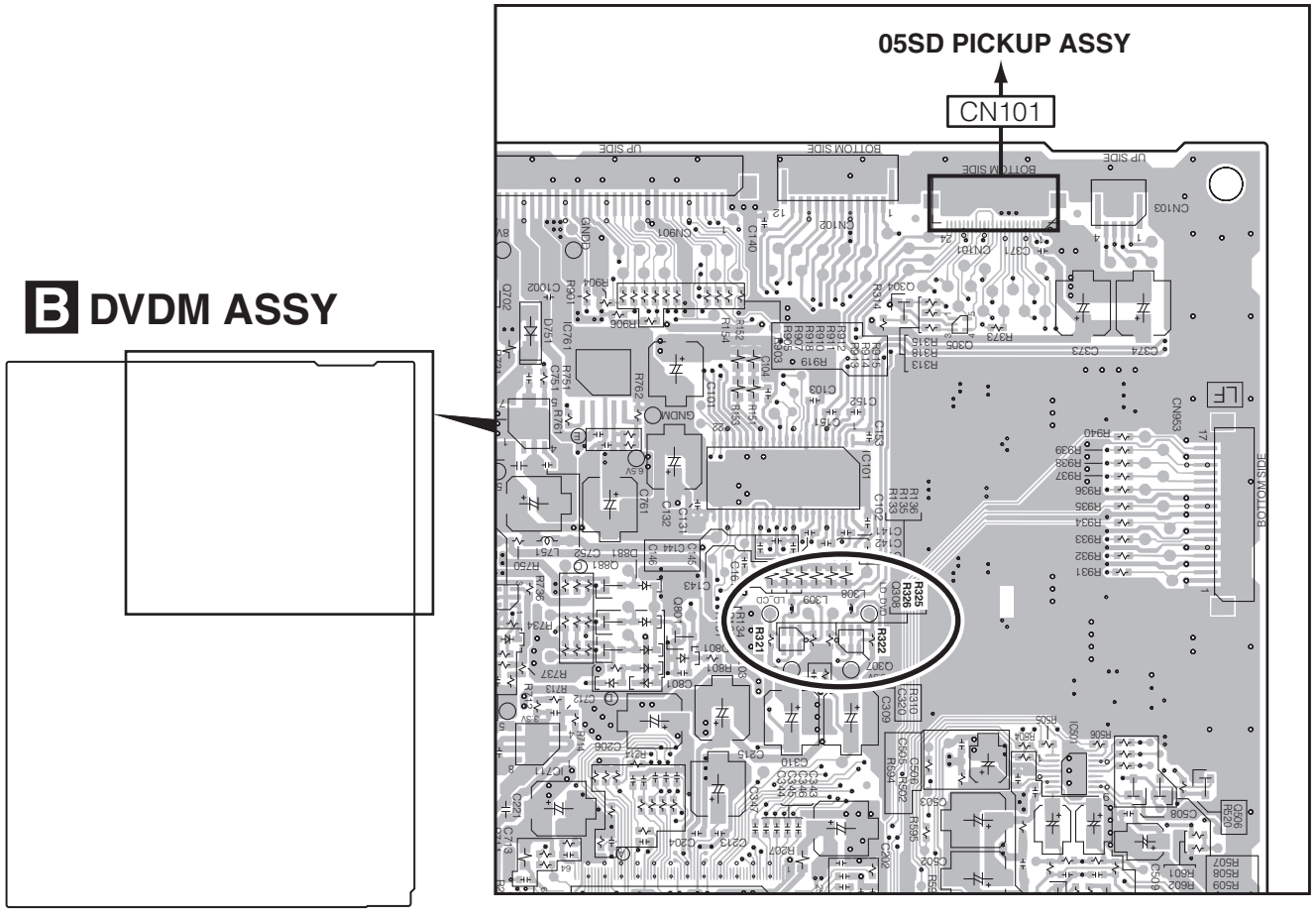
  Measure the voltage between the both ends of R321 or R326 on the DVDM Assy. If the voltage is 0.4 V or higher, the 780-nm LD is degraded.

- **No playback of a DVD (Test Mode), No playback of a SACD :**

  Measure the voltage between the both ends of R322 or R325 on the DVDM Assy. If the voltage is 0.4 V or higher, the 650-nm LD is degraded.

If the measurements show degradation of an LD, replace the 05SD Pickup Assy.

B DVDM ASSY



5.2 TROUBLESHOOTING OF THE SACD

No.	Symptoms	Diagnosis Contents	Possible Defective Points
1	The power is not turned on.	Are wires of output connector (MAIN Assy) and CN901 (DVDM Assy) disconnected or damaged ?	Connector / cable
		Check that the following voltage is output : + side of C739 : 3.3V	**DVDM Assy** 3.3V Regulator IC (IC731)
2	An opening screen is not displayed on the monitor. (The FL display lights. The mechanism does not work.)	Are the signals output from IC201-pin 98 (MDATA) and pin 99 (SCLK) on the DVDM Assy ? (in the range of 0-3V)	**DVDM Assy** DVD IC (IC201)
		Are the signals input into IC5501-pin 85 (MDATA) and pin 86 (SCLK) on the MAIN Assy ? (in the range of 0-3V)	**MAIN Assy** UCOM (IC5501)
		Check that the following voltage are output : IC751-pin 1 on the DVDM Assy : 5V	**DVDM Assy** 5V Regulator IC (IC751)
		Is a crystal resonator (X202: 27MHz) on the DVDM Assy oscillating ?	**DVDM Assy** Crystal resonator (X202)
		• Is a signal input into IC203-pin26 (PCE#) on the DVDM Assy ? (Is a signal "H" for 80 mS and then "L" after the power is turned on ?) → Communication with flash ROM. • Are the signals input into IC202-pin 16 (DWE#), pin 19 (DCS#) and pin 38 (SDCLK) on the DVDM Assy ? (Is a signal fluctuating ?) → Communication with SDRAM	**DVDM Assy** DVD IC (IC201) Flash ROM (IC203) SDRAM (IC202)
		Is a signal output from IC203-pin 28 (PRD#) on the DVDM Assy? (Is a signal fluctuating for several hundred mS after the power is turned on ?)	**DVDM Assy** Flash ROM (IC203)
		Is a signal input into IC5501-pin 11 (DVD ACK) on the MAIN Assy ? (Is a signal fluctuating ?) → Communication with FL Control IC	**DVDM Assy** DVD IC (IC201) **MAIN Assy** UCOM (IC5501)
		Is a signal output from IC5501-pin 13 (XREADY) on the MAIN Assy ? (Is a signal fluctuating in the range of 0-3V ?)	**MAIN Assy** UCOM (IC5501)
		Are the signals output from IC5501-pin 84 (SDATA) on the MAIN Assy ? (in the range of 0-3V)	**DVDM Assy** DVD IC (IC201) **MAIN Assy** UCOM (IC5501)
		Are the signals of IC204-pin 5(SDA) and pin 6(SCL) on the DVDM Assy fluctuating for one or two seconds after the power is turned ?	**DVDM Assy** EEPROM (IC204)
3	A tray cannot be opened. (An opening screen is displayed on the monitor)	Does the voltage of CN104-pin 3 and pin 5 on the DVDM Assy change normally ? Pin 3 (SW2(TRIN)): Tray is fully closed: "L" Pin 5 (SW1(TROUT)): Tray is fully opened: "L"	**LOAB Assy** Tray SW (S101)
		Is the signal input into IC101-pin 11 (TROPEN) on the DVDM Assy ? At open: 3.3V, At close: 0V	**DVDM Assy** DVD IC (IC201)
		Are the signals output from IC101-pin 1 and pin 2 (CN103-pin 1 and pin 2) on the DVDM Assy ? Pin 2: Approx. 6V during opening tray approx. 0V during closing tray. Pin 1: Approx. 0V during opening tray approx. 6V during closing tray.	**DVDM Assy** FTS Driver IC (IC101)
		Are wires of CN104 and CN103 on the DVDM Assy disconnected or damaged ?	Connector / cable
		Does the voltage of CN102-pin 1 on the DVDM Assy change to 0V by pressing the Inside switch.	Inside switch

No.	Symptoms	Diagnosis Contents	Possible Defective Points
4	Playback impossible (no focusing)	Are the signals output from IC101-pin 3 (FOCS_DRV) and pin 4 (FOCS_RTN) on the DVDM Assy ?	**DVDM Assy** FTS Driver IC (IC101)
		Does 650-nm LD emit light ? Does a pickup lens move up / down ? Does an actuator spring bend ?	Pickup
		Are plastic parts damaged ? Or is a shaft detached ? Is the turntable detached or tilted ?	Mechanism section (motor)
		Is flexible cable of CN101 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC201-pin 42 (FOSO) on the DVDM Assy ? (Device control of about 1.4 V is output usually. It is fluctuated by about ±250 mV with focus up / down.)	**DVDM Assy** DVD IC (IC201)
5	Playback impossible (Spindle does not turn)	Are the signals output from IC101-pin 30 (W), pin 33 (V) and pin 35 (U) on the DVDM Assy ? Is pin 26 (STBY) fixed LOW ? (pin 26 is High at playback: 3V)	**DVDM Assy** FTS Driver IC (IC101)
		Is there any part detached from the spindle motor ? Or Is there any foreign object lodged in it ?	Mechanism section (Spindle motor)
		Are wires of CN102 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC201-pin 37 (DMSO) on the DVDM Assy ?	**DVDM Assy** DVD IC (IC201)
6	Playback impossible (Playback stops)	Does 650-nm LD deteriorate ? If the voltage at each both ends of R322 and R325 on the DVDM Assy is 0.4 V or more, the 650-nm LD is definitely deteriorated.	650-nm LD deteriorated. (When playback of a DVD is impossible)
		Does 780-nm LD deteriorate ? If the voltage at each both ends of R321 and R326 on the DVDM Assy is 0.4 V or more, the 780-nm LD is definitely deteriorated.	780-nm LD deteriorated. (When playback of a CD is impossible)
		Is there abnormality in FG waveform ? (IC201-pin 47)	**DVDM Assy** FG output : FTS Driver IC (IC101)
		Are there scratches or dirt on the disc ?	Disc

5.3 TROUBLESHOOTING OF THE NETWORK ASSY

[1] DIAGNOSIS OF THE NETWORK BLOCK

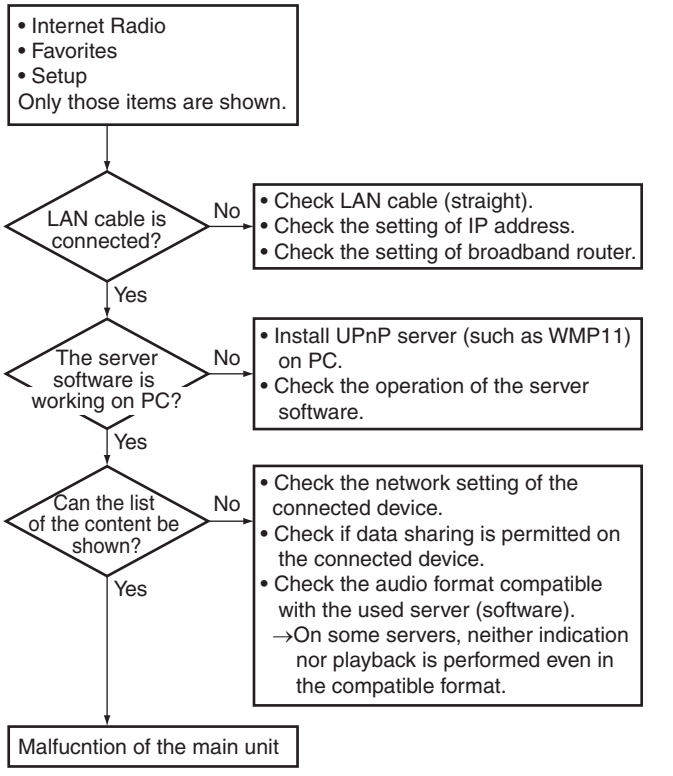
1. Constitution of network function

SACD/CD -- TUNER (FM/AM) -- HOME MEDIA GALLERY -- LINE

- USB
- iPod
- Internet Radio
- Server1
- Server2
- Server3
- Favorites
- Setup
  - Information
    - Firmware Version → Indicates the version of the firmware.
    - MAC Address → Indicates MAC Address.
    - IP Address → Indicates IP Address.
    - Gateway IP → Indicates Gateway IP.
    - Proxy Server → Indicates if Proxy Server is valid or invalid.
    - Subnet Mask → Indicates Subnet Mask.
  - Network Setup

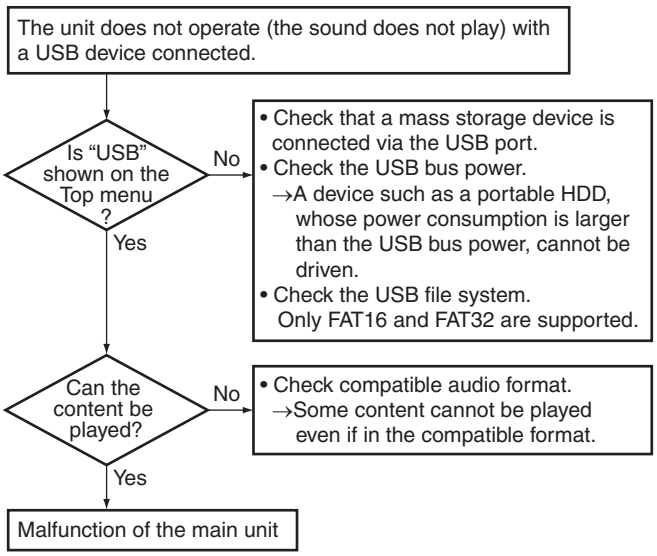
2. Flow chart for isolation of network malfunction

<Network connection>

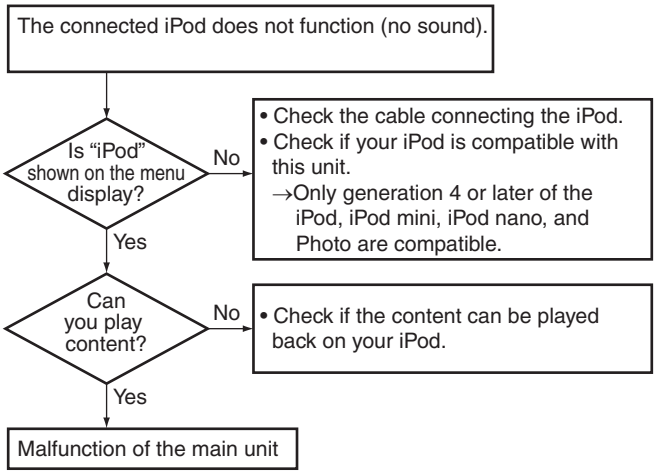


IC881: AYW7238
Network and user defined settings such as favorites are stored in this IC.

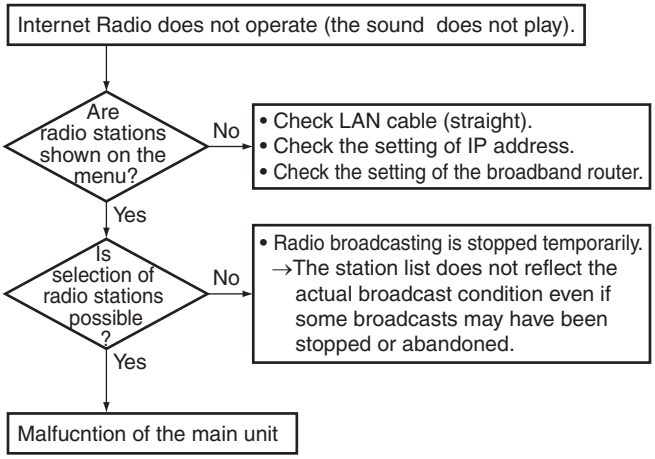
<USB connection>



<iPod connection>

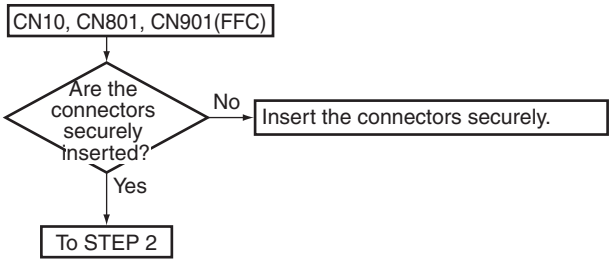


<Internet Radio connection>

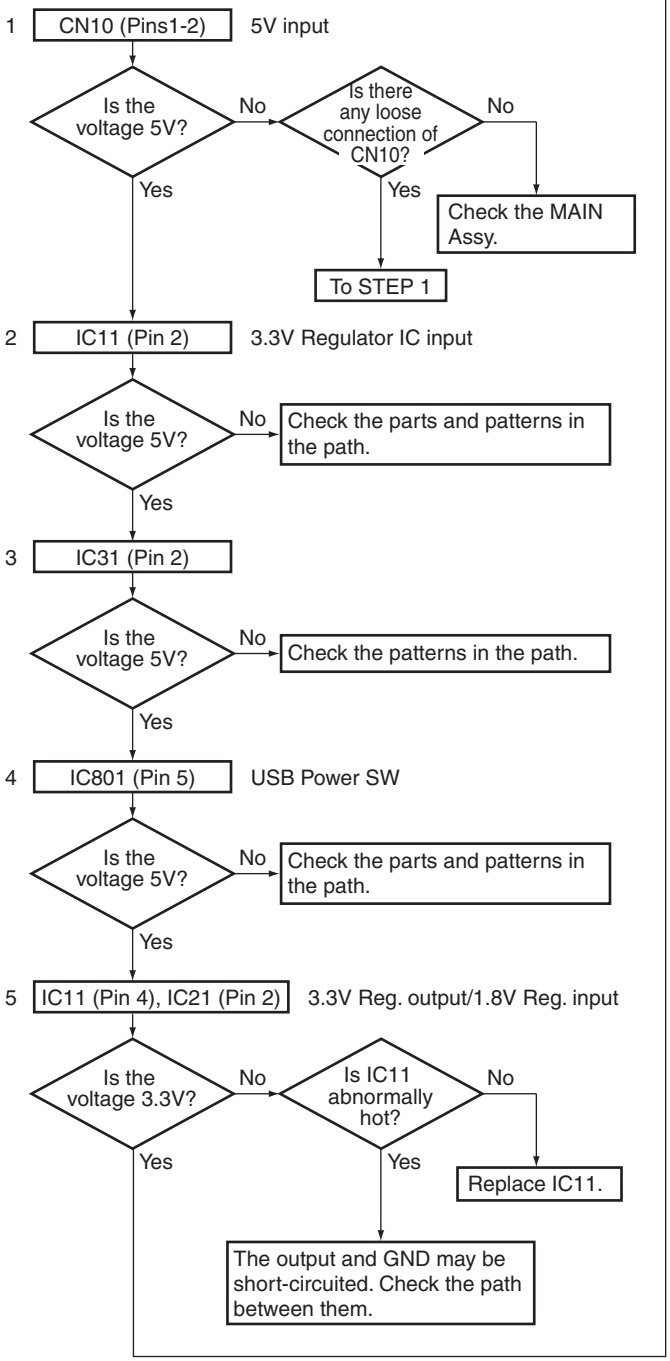


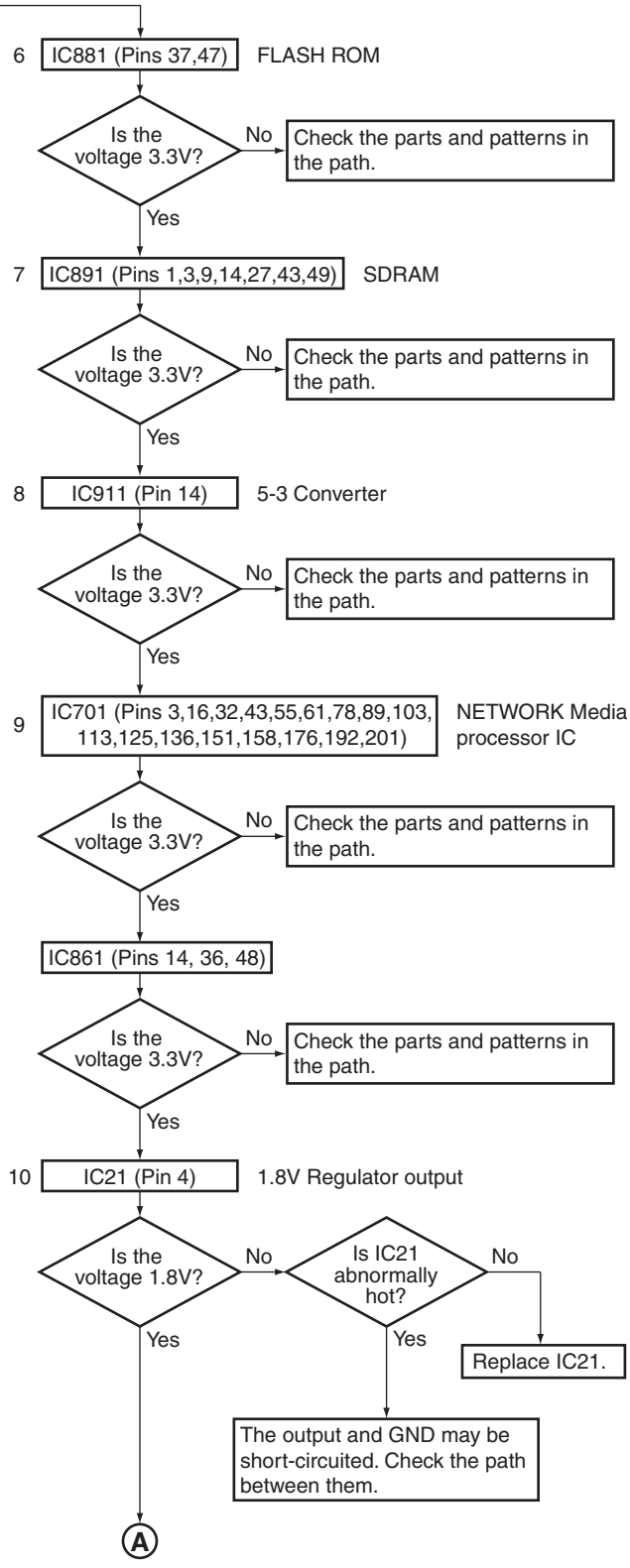
[2] TROUBLESHOOTING THE NETWORK BLOCK

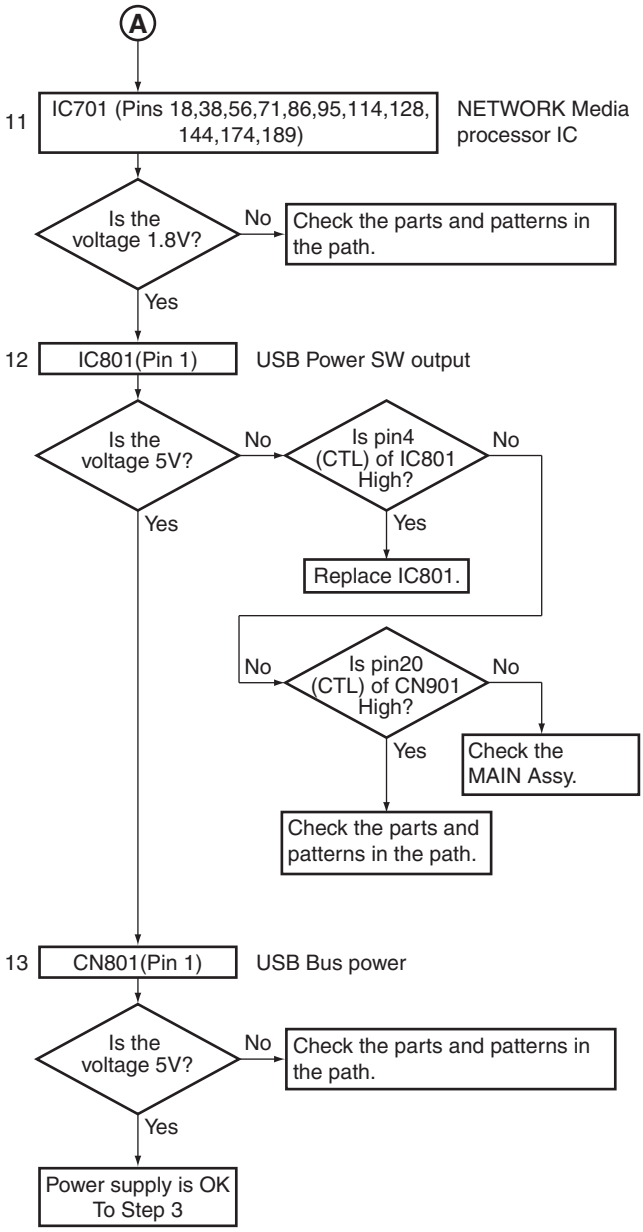
Step 1:Connectors



Step 2:Power supply

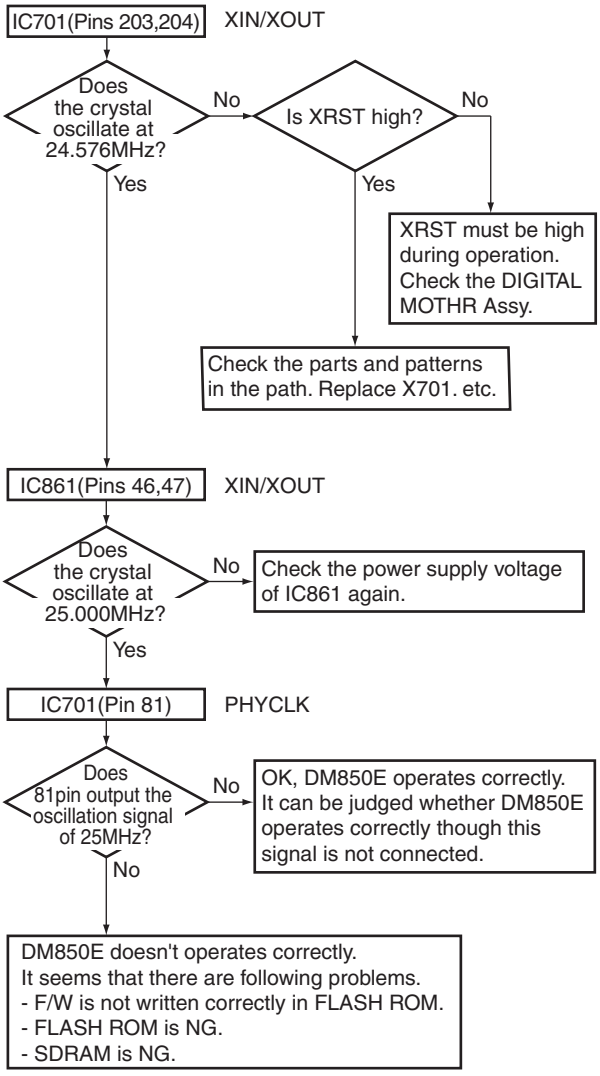






Step 3:Operation of Network Media processor IC

*Please confirm it with the USB memory connected for the content.



Step 4 : Communication between DM850E and System CPU

The signal shown by following fig are communication line of DM850E and main CPU(IC101).
Confirm the connection of the signals along these routes.

fig. 1

	CN901	IC911 (5V→3V)		IC701
XRST	Pin 1	Pin 12	Pin 11	Pin 190
SPI CS	Pin 10	Pin 2	Pin 3	Pin 143
SPI CLK	Pin 3	Pin 5	Pin 6	Pin 141
SPI TX	Pin 8	Pin 9	Pin 8	Pin 147

fig. 2

	IC701	IC921 (3V→5V)		CN901
SPI RX	Pin 146	Pin 9	Pin 8	Pin 7
SPI REQ	Pin 100	Pin 5	Pin 6	Pin 9

Step 5 :Communication between DM850E and System CPU

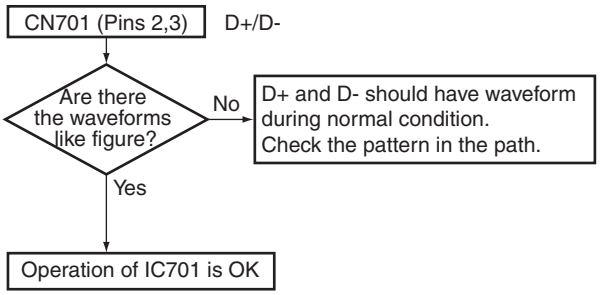
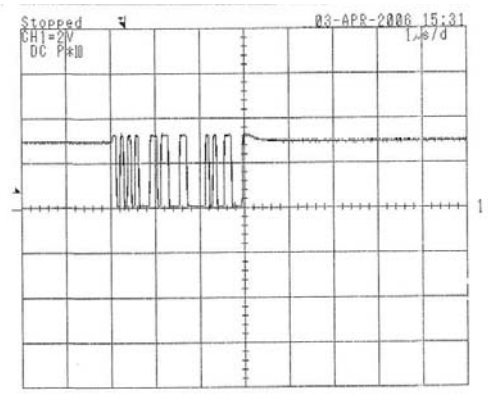
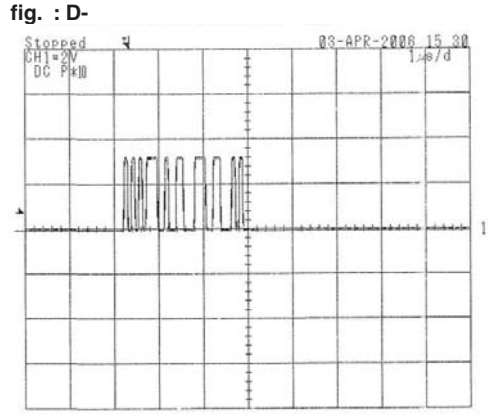


fig. : D+



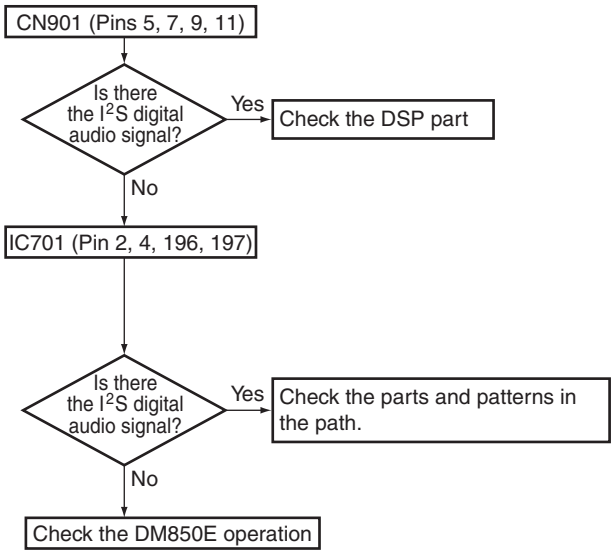
X : 1usec/div, Y : 2V/div

fig. : D-



X : 1usec/div, Y : 2V/div

Step 6 : Audio Output

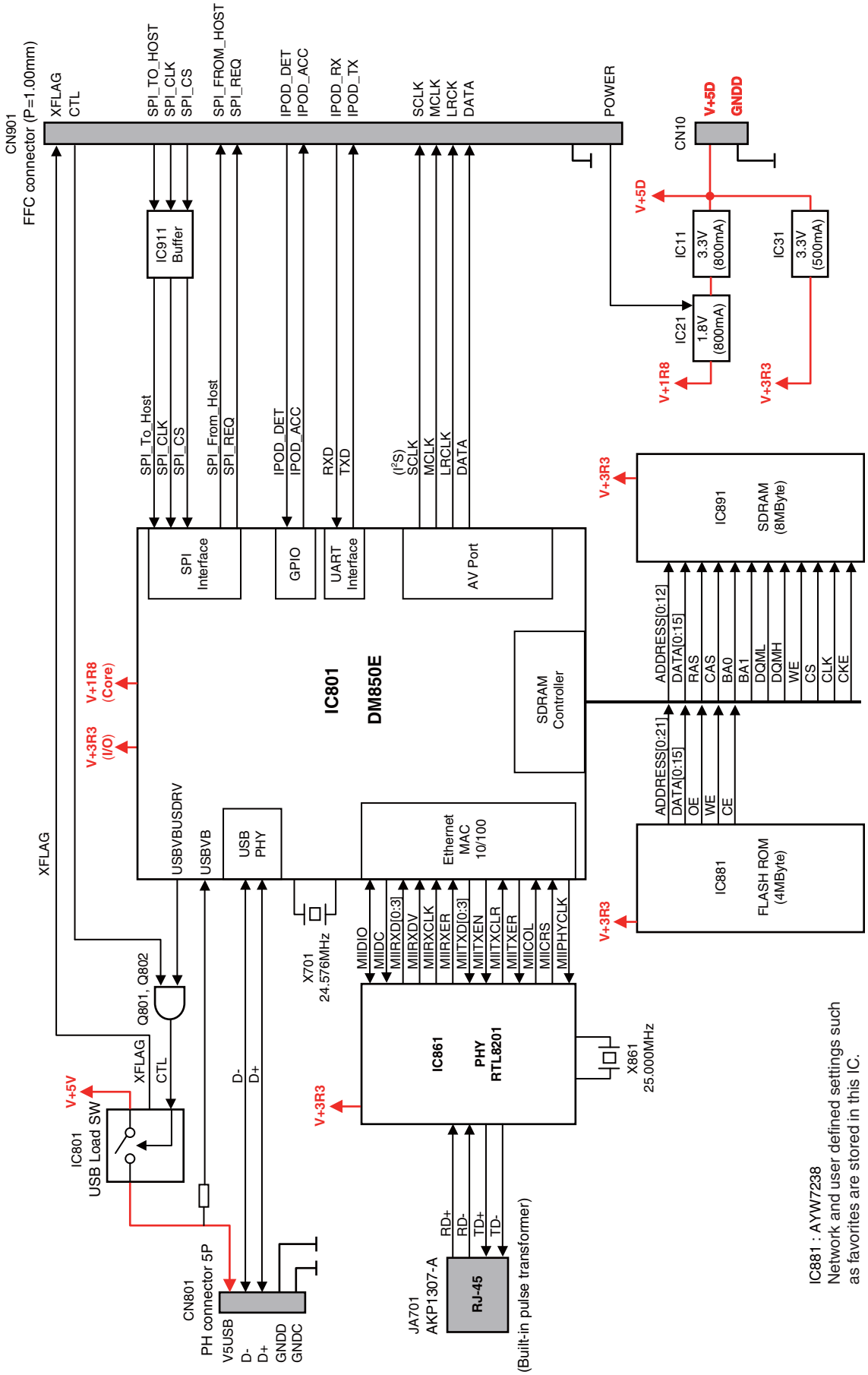


<Additional information>

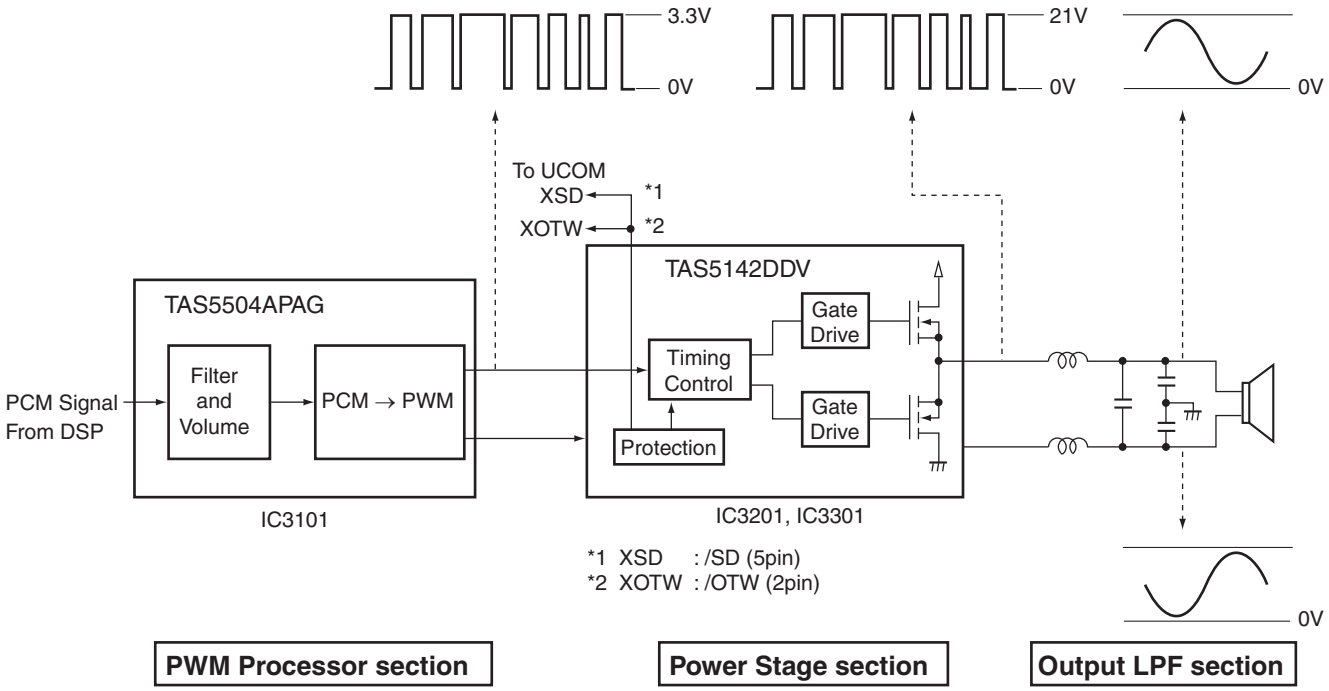
- An IC having data (MAC addresses, Favorite and Details etc. that users have changed) on the network (Home Media Gallery) is IC881 (AYW7238).

- How to confirm the network connection
  Set to “Home Media Gallery” entry → Select ”Set up” from home menu → Select ”Network Setup” with ↑↓ Key →
  When “Network Connection Network Found” is displayed, the network can be connected.
  When “Network Connection No Network Found” is displayed, the network cannot be connected.
  → Check the router setting or LAN connection.

[3] NETWORK MODULE BLOCK DIAGRAM



5.4 CIRCUIT DESCRIPTION OF DIGITAL AMP. SECTION



PWM Processor section

The PCM signals output from the DSP are input to this section, and their volume and sound quality are digitally adjusted. At the output stage, after conversion from PCM to PWM, the signals are output to the Power stage.

Power Stage section

In this section, timing is controlled so that the MOSFETs on the high and low sides will not be turned on simultaneously. The voltage of the PWM signals are raised to drive the gates of the MOSFET, and the PWM signals to drive the speakers are output from the MOSFET at the output stage. Detection and protection functions against short-circuiting of the output signals and temperature exceeding the standard value are also provided.

If the detection and protection work, the ports of the power stage ICs become the following state.

Power Stage ICs No.	Protection Enable State
IC3201	/SD (5pin) ⇒ L
IC3301	/OTW (2pin) ⇒ L

Output LPF section

The carrier elements, high-frequency signals that are unnecessary for these speakers, are eliminated. The signals passed through the LPF will become sine-wave signals, as shown in the figure above.

5.5 SPECIFICATIONS FOR THE PROTECTION CIRCUITS FOR THE DIGITAL AMPLIFIER

The protection circuits for the Digital Amplifier are activated, following the specifications shown below. The error indication on the FL display shows the reason a protection circuit was activated.

Upon diagnosis of the Digital Amplifier, refer to the specifications for the protection circuits here and the overview of the Digital Amplifier circuitry.

1. Overview

IC protection: Temperature and excess current

The system microcomputer monitors the Shutdown Request port (5P/SD) and Abnormal Temperature Detection port (2P/OTW) of the Power Stage IC. As soon as it detects any abnormality, it forcibly shuts the unit off.

External circuitry protection: DC PROTECTION

The system microcomputer monitors the difference in electric potential between the positive and negative electrodes of the AMP BTL output. If DC output caused by damage of the power stage is generated, the system microcomputer will forcibly shut the unit off to protect the connected speakers.

Upon the next power-on, the volume is set to 0, and an error message is displayed on the FL display.

2. Ports on the system microcomputer to be used for detection

Pin 75: SHUTDOWN

Low voltage at this pin means overcurrent at the Power Stage ICs or that the power supply voltage for the gate drive for the Power Stage ICs, i.e., VS+12 is less than 10V.

Pin 69: XOTW

Low voltage at this pin means the temperature at the Power Stage ICs exceeded 125°C.

Pin 34: XDC_PROT

If a low signal is detected at this port, it means that some output at the power stage is in failure, imposing excess DC electric potential on the speakers.

Note: Each Power Stage IC supports 2 channels. As this unit employs the PBTL connection method, two Power Stage ICs (for 4 channels) are provided. For abnormality detection, logical OR operation for each IC is implemented. For DC PROTECTION, logical OR operation for the L and R channels is also implemented. Therefore, to identify which IC is in failure, it is necessary to open the abnormality detection circuit of each IC or DC PROTECTION circuit of each channel.

3. Detection timing

Start : 500 ms after transmission of reset data to the TAS5504 begins (to compensate for the reset data transmission time of 500 ms).

Finish : When the STANDBY/ON key is pressed again (when the power-off process starts).

4. Operation of the protection circuits

The following three protection circuits are activated when the conditions shown below are met:

Overcurrent detection: FL display 

Conditions: If the SHUTDOWN ports, which are monitored every 10 ms, become low 7 times in succession.

Abnormal temperature detection 1: FL display 

Conditions: If the XOTW ports, which are monitored every 10 ms, become low in succession for one minute.

Abnormal temperature detection 2: FL display 

(Prerequisite: When the XOTW port is monitored every 10 msec, the signal is low 3 consecutive times.)

Conditions: The above prerequisite is met, and the conditions for excess current detection are met as well.

DC output detection: FL display 

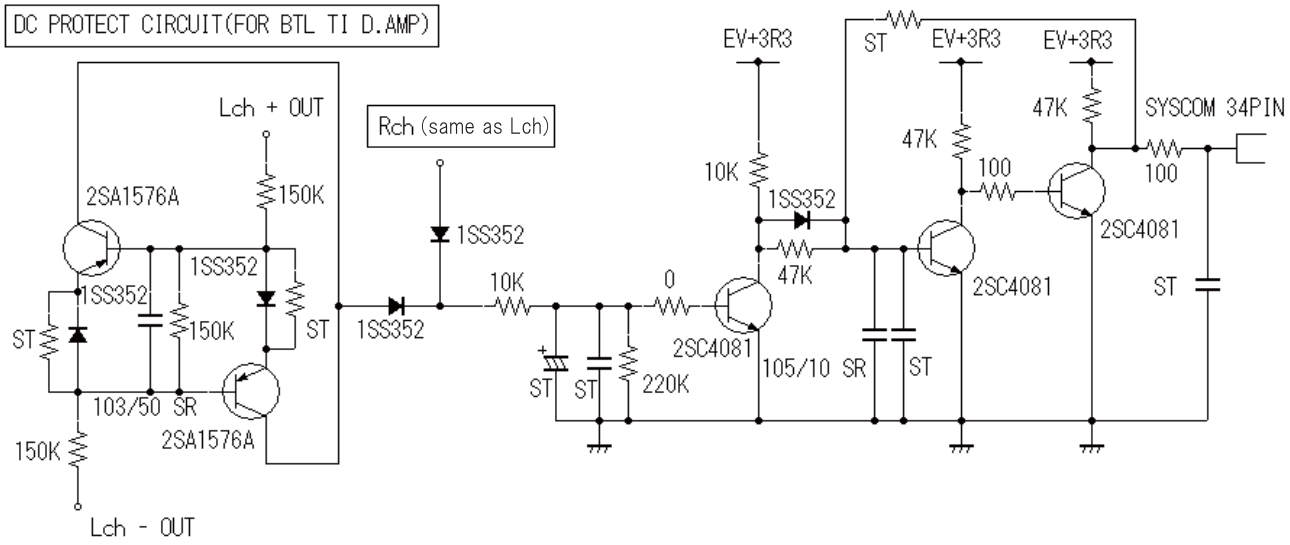
Conditions: When the XDC_PROT port is monitored every 0.5 msec, the signal is low 6,000 consecutive times (for 3 sec).

5. Process when the protection circuits are activated

The unit is shut down within 30 ms after abnormality detection then the volume level is set to 0. The unit can be turned on immediately after the shutdown.

The external DC PROTECTION circuit and its operating voltage are as shown below. A simple method for checking operation is also described.

■DC Protect Circuit



■Operation specifications

Voltage between the positive and negative electrodes: 3.5 V ± 1.0 V (Continuously for 3 sec)

■Simple method for checking operation

Check if either of the following conditions is met:

- The DC PROTECTION circuit must be activated with the following conditions: LINE IN L, R inputs, 20 Hz, 2.15Vrms, no load, VOL: Max
- The DC PROTECTION circuit must be activated with the following conditions: CD PLAY (Disc: TCD-785,* 5 tracks, 20 Hz, 0 dB signal), no load, VOL: Max

NOTE : Another disc can be used if the same conditions are met.

※ **Note**: If the DC PROTECTION circuit is not activated under the above conditions, before making a final judgment check the circuit by increasing the A.IN input signal level a few dB.

6. SERVICE MODE
6.1 SERVICE TEST MODE

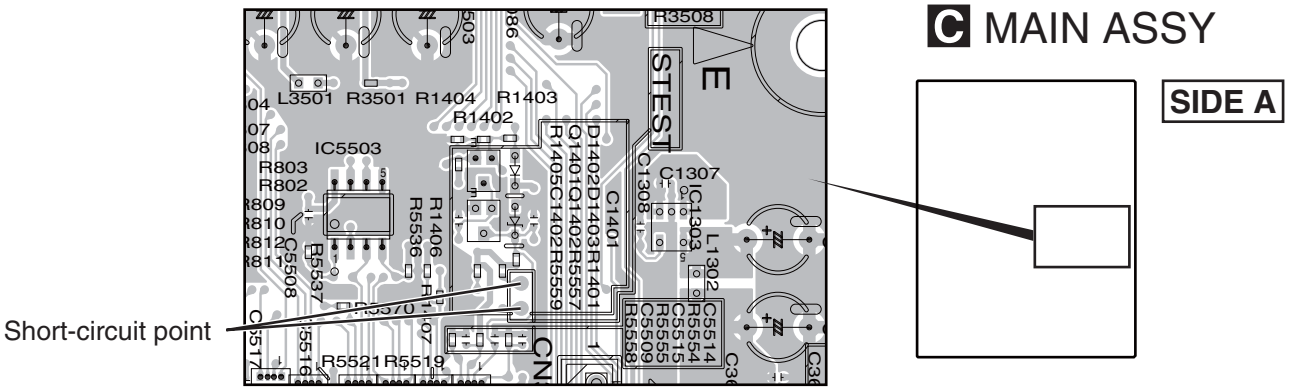
1. Configuration and Conditions to Check

- While in Service Test Mode, an emergency shutdown is not performed even if the one of errors shown below occurs. (Ignore)
- Even after the unit is forcibly shut off in Normal mode upon detecting one of the errors indicated below, you can immediately turn it on in Service Test mode, without waiting for 1 minute.
- You can check the accumlated power-on time in Service Test mode.

2. Entering Test Mode

- Short-circuit the STEST TEST land then turn on the AC power.
  * The initial function is SACD/CD.

■ Position of the Service Test Mode Terminals



- The indications on the FL display upon entering Service Test mode differ depending on whether the unit was turned off normally or automatically shut off upon detection of one of the following failures:

<<After power turned off normally>>

[Display]

<<After an AMP error occurs>>

<<After an abnormal temperature is detected>>

<<After an SACD/CD error occurs>>

<<After an overcurrent is detected 1>>

<<After an EEPROM error occurs>>

<<After an overcurrent is detected 2>>

* To exit Service Test Mode, turn the power off or unplug the AC power cable.
* When Service Test mode is exited, only data regarding the above-mentioned failures in RAM will be initialized. (User-setting data in RAM will not be initialized.)

3. Operations

• Operations are basically the same as in Normal Mode. However whenever functions are changed, the display indicates that the unit is in Service Test Mode, as shown below.

SERVICE TEST MODE scrolls across the top of the display when functions are changed.

After scrolling, SERVICE TEST MODE continues to be displayed only for LINE, PHONO, and FRONT AUDIO.

For all other functions, SERVICE TEST MODE is not displayed after it scrolls off the display.

4. Description of Errors

• According to the type of malfunction, the following error indications are displayed when the unit is turned on:

Protect Circuit is activated.

1. An abnormal level of electricity indicates a short-circuit at V+10, V+5, or V+3R3 or that the normal value(s) at one or more of these points has/have been exceeded.
2. The XPROTECT line up to the system control computer is short-circuited to ground or broken.

SACD/CD malfunction

1. An irregular current indicates a short-circuit at V+6R8, V+5V, or V+3 or that the normal value(s) at one or more of these points has/have been exceeded.
2. The VDET line up to the system control computer is short-circuited to grount or broken.

1. It is possible that there is a short-circuit or a break in the communication line to the EEPROM.
2. There may be a problem with the IC for the EEPROM.

• If an error message is not displayed the next time you turn on the power in Normal Mode, a speaker terminal may be short-circuited.

• If an error message is displayed again, it may indicate one of the following problems:

1. The Digital AMP IC in the AMP Assy is malfunctioning.
2. There is a short-circuit between the Digital AMP IC and the speaker terminals.
3. The XSD line from the above-mentioned Digital AMP IC up to the system control computer is short-circuited to grount or broken.

• If "Over Temperature" is not displayed the next time you turn the power on in Normal Mode, the problem has been resolved.
(Turn down the volume when listening because high volumes may temporarily cause an increase in temperature.)

• If "Over Temperature" is displayed again, it may indicate one of the following problems:

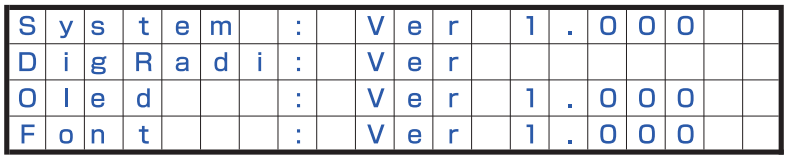
1. The Digital AMP IC in the AMP Assy is malfunctioning.
2. The OTW line from the above-mentioned Digital AMP IC up to the system control computer is short-circuited to grount or broken.

- If the error message appears again after disconnecting the speakers and turning the unit back on again, the possible causes are:
  1. The Digital Amp IC on the AMP Assy is in failure. (An DC output is generated between the positive and negative electrodes of the AMP BTL output.)
  2. There is a failure on the line between the DC PROTECTION circuit and the system microcomputer.
  3. There is some dirt or other foreign matter adhered around the AMP output.

5. Accumulated power-on time

- While the unit is on, if you hold the **STOP** key on the unit pressed for at least 8 seconds, the accumulated power-on time will be displayed, following the version of each microcomputer.

Microcomputer version



From the top: System computer, digital radio, OLED control microcomputer, Font ROM

↓ After about 3 seconds

Accumulated power-on time

- The accumulated power-on time is counted regardless of the function or operation. (Time is not counted in Standby mode.)
- Countable time is up to 255H59M. Time exceeding this will not be counted (the display will not change).
- Generally, the accumulated power-on time cannot be cleared. (To clear the time, it is necessary to enter Special Mode (unavailable), which is used for CA checking on the production line.)

6. DSP Error Display

- While the unit is on, each time you press the "**SOUND**" key on the remote control unit, the DSP error indication and the normal display are toggled.

DSP Error Display specifications

The error name consists of 6 characters.

OLED 

Example>

ERR.1 

Cannot receive data from the DSP
→Communication error between the source and the DSP → A DSP error is suspected

ERR.2 

No value for HREQ
→A DSP error is suspected

NO ERR 

There is no problem

DSP Error Display mode

Press the "SOUND" key in Service Test Mode to enter DSP Error Display mode.
Press the "SOUND" key again to return to normal Service Test Mode.
This is why the normal "SOUND" function is disabled while in Service Test Mode.

7. Displaying the SACD/CD F/W Version

• With the power on, pressing the ESC and CHAP keys on the test remote control unit (GGF1381) displays the following:

This indicates that the SACD/CD F/W part number is AYW7191 Version 1.01.

8. DISC Adjustment Mode

・Only in Service mode, playback of a DVD is enabled for adjusting servos.
Only the test DVD for servicing (GGV1025) is supported, and operations with other DVDs are not guaranteed.
Only basic playback, error-rate measurement, track selection, and scanning are supported, and any other operations are not guaranteed.

(Notes)

Self-diagnosis to check major IC communications (system control computer, display microcomputer, DSP, ROM, and others).

Use the following to check communications with the LSI.

■ Communication between the system control computer and the SACD/CD module

On the service remote: If the SACD/CD version is displayed on the OLED when you press ESC and CHAP, communication is OK.

■ Communication between the system control computer and the NETWORK module

If the Home menu is displayed with the HOME MEDIA GALLERY function, communication is OK.

■ Communication between the system control computer and the OLED control microcomputer

If the version of OLED is displayed after the STOP button on the main unit is held pressed for at least 8 seconds, communication is OK.

■ Communication between the OLED control microcomputer and the FONTROM

If characters are displayed, communication is OK.

■ Communication between the system control computer and the DSP

If there are no errors indicated on the DSP Error Display in Service Test Mode, communication is OK.

■ Communication between the system control computer and the modulator (TAS5504)

If sound is output and the volume can be adjusted up and down, communication is OK.

■ Communication between the system control computer and the EEPROM

If "EEPROM Error" is not displayed while the power is on, communication is OK.

7. DISASSEMBLY

Note 1: Do NOT look directly into the pickup lens. The laser beam may cause eye injury.
Note 2: **Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.**
Note 3: For performing the diagnosis the DVDM ASSY, the following jigs for service is required:
• Cable for service (GGF1157) (When diagnosing side B, GGD1425 is also required.)

Diagnosing Each Board

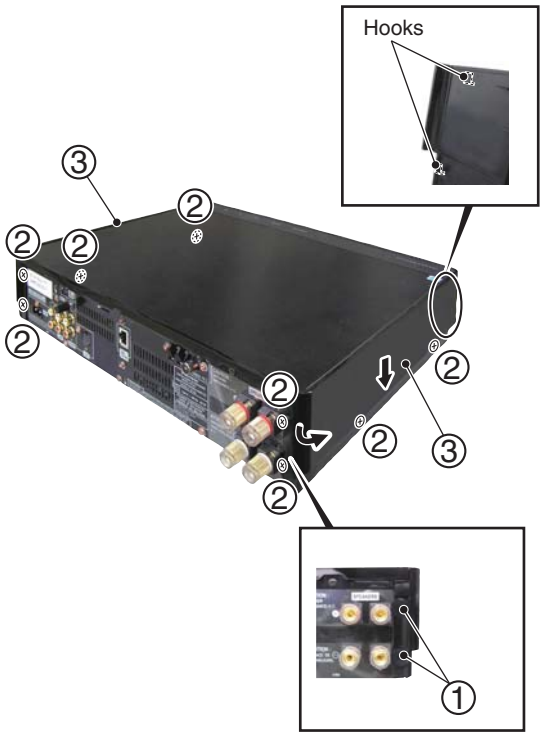
1 Side Panel, Top Panel Assy, Tray Panel

① Remove the cushion seal.

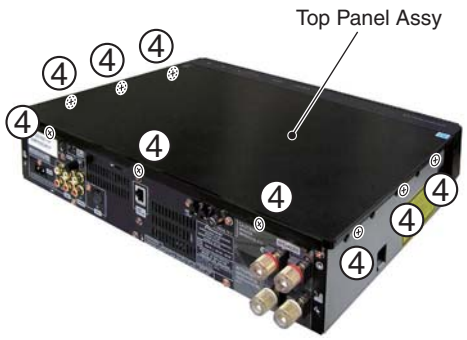
② Remove the 8 screws.

③ Slide the left and right side panels down and to the rear to remove them.

Caution: Do not damage the 2 hooks on the back of the left and right side panels.



④ Remove the 9 screws and lift off the Top Panel Assy.



⑤ Turn on the power by pressing the STANDBY/ON (⏻) button.

⑥ Press the OPEN/CLOSE (⏏) button to open the tray.

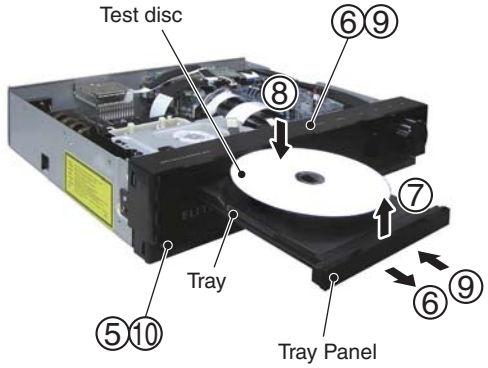
⑦ Remove the Tray Panel.

⑧ Insert the test disc.

⑨ Press the OPEN/CLOSE (⏏) button to close the tray. (Test disk is clamped.)

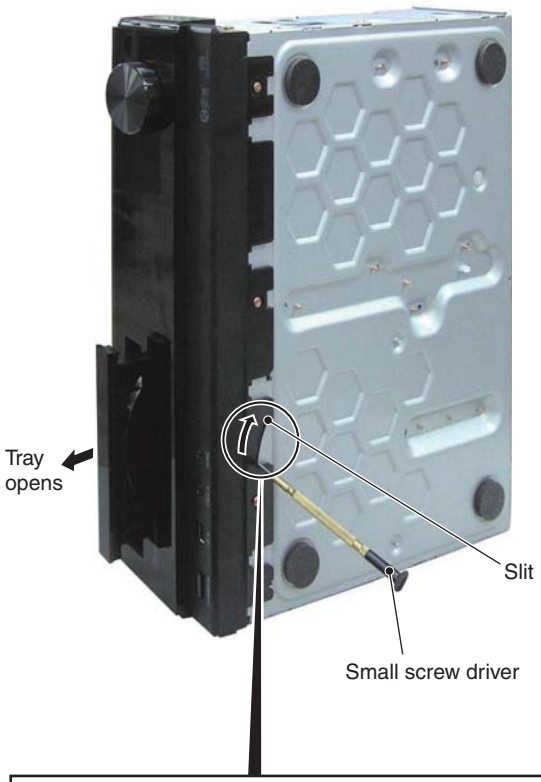
⑩ Turn off the power by pressing the STANDBY/ON (⏻) button.

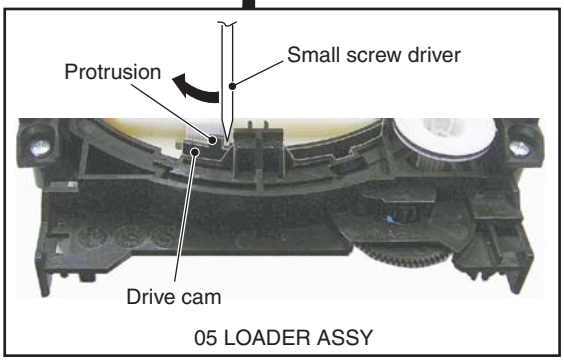
⑪ Unplug the power cord.



● **Opening the tray when you can't turn on the power**

Place a small flat head screw driver through the slit on the bottom of the unit and slide the protrusion on the 05 LOADER ASSY drive cam in the direction shown in the picture.
Once the tray is partially open, pull it completely open by hand.

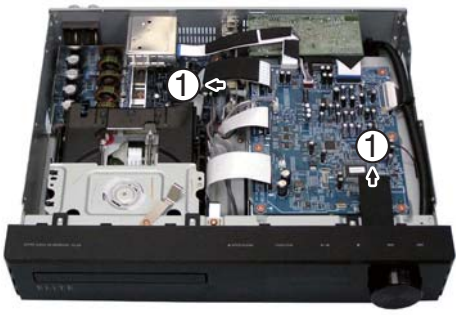




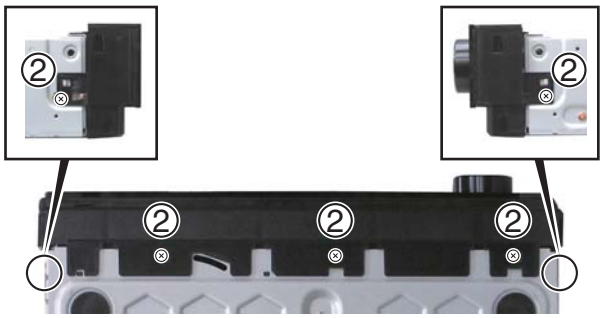
● **Bottom view**

2 Front Panel Assy

① Disconnect the flexible cable (x1) and the connector (x1).

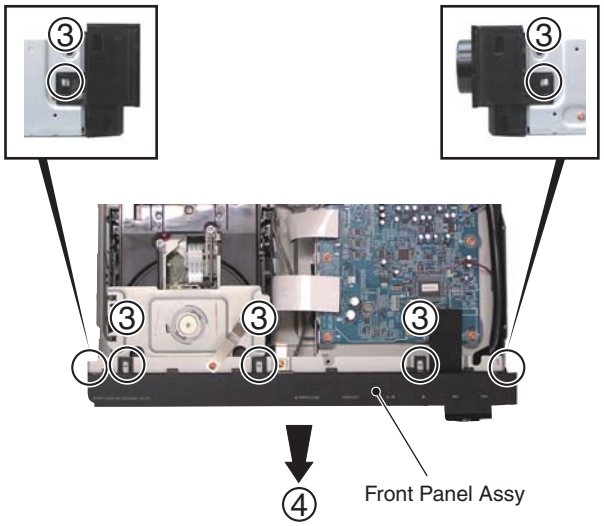


② Remove the 5 screws.

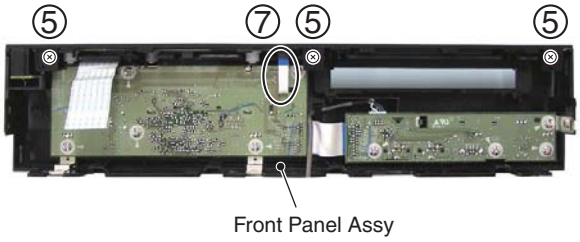


③ Unlatch the 5 hooks.

④ Remove the Front Panel Assy by sliding it in the direction of the arrow.



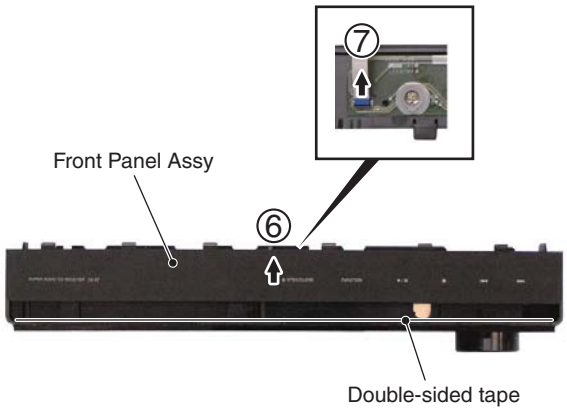
⑤ Remove the 3 screws.



⑥ Slide the Touch Panel to remove it from the Front Panel Assy.

Caution: The Touch Panel is affixed with double-sided tape.

⑦ Remove the flexible cable (x1).



FM/AM Tuner Unit soldering point

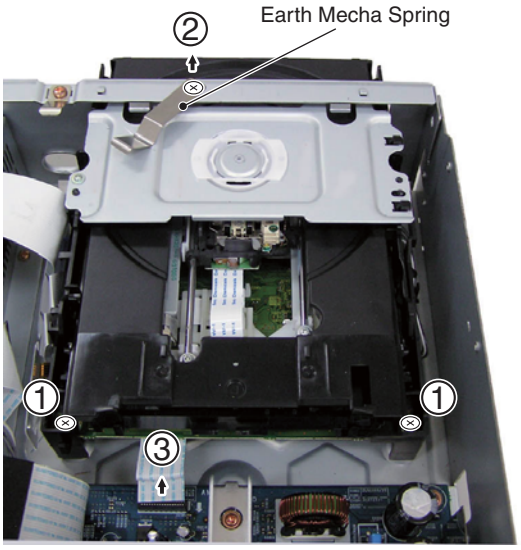
When repairing the FM/AM Tuner Unit, be sure to solder to the 5 marked points before attaching to the unit.

3 DVDM Assy

① Remove the 2 screws at the rear of the DVDM Assy.

② Remove the Earth Mecha Spring by removing the screw attaching it to the unit.

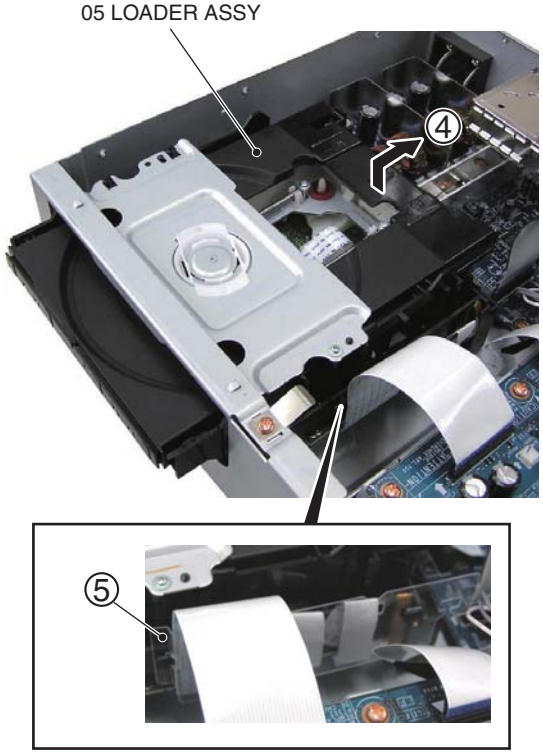
③ Remove the flexible cable (x1).



● **Top View**

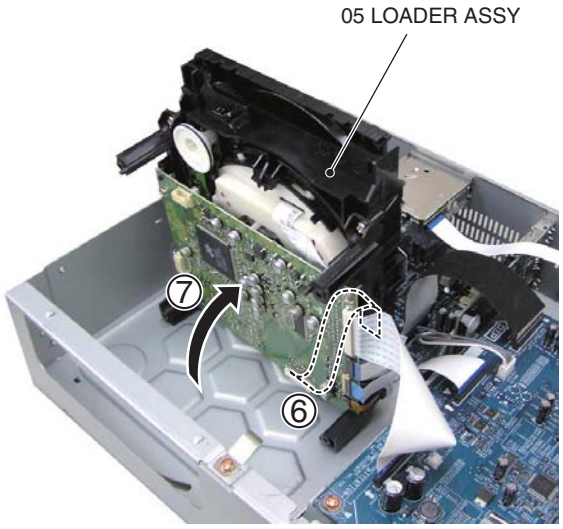
④ Slightly lift the 05 LOADER ASSY and slide it backwards.

⑤ Remove the Mecha Barrier.



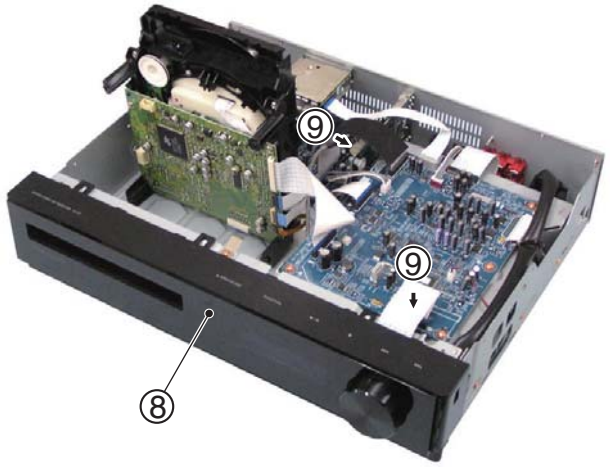
⑥ Replace the flexible cable removed in step ② with an extension jig cable (GGF1157) and connect it to the same position.

⑦ Lift up the 05 LOADER ASSY.



⑧ Install the Front Panel Assy.

⑨ Reconnect the flexible cable (x1) and the connector (x1) to their original positions.
(If you removed the flexible cable (x1) from on the Touch Panel in step ⑦ of section " 2 Front Panel Assy", reconnect it to its original position.)



Diagnosis

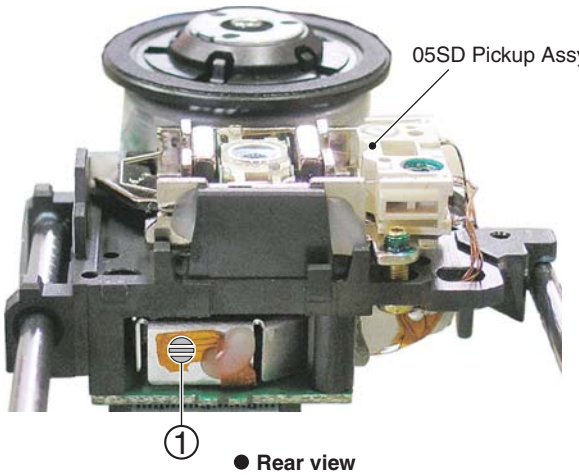
Caution: Service cable 5P (GGD1425) is necessary for diagnosing the DVDM Assy (SIDE B).

Removing the Traverse Mechanism Assy-S and 05SD Pickup Assy-S

1 05 LOADER Assy

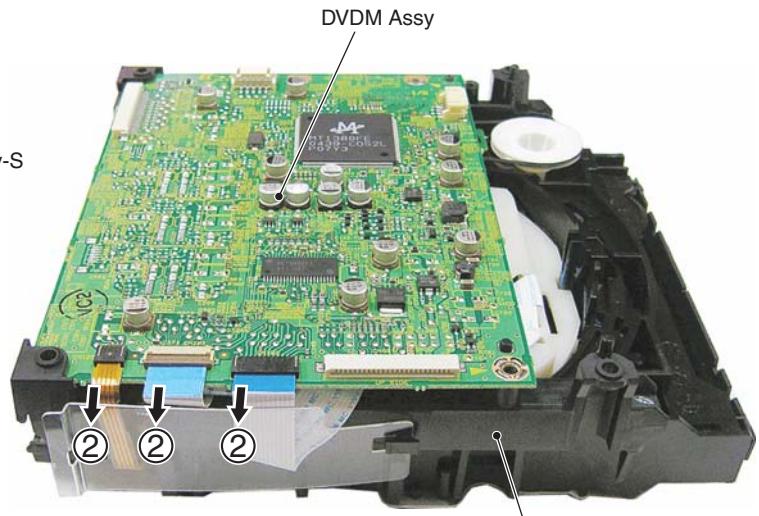
① Short-circuit point by soldering.

Note: After replacement, connect the flexible cable for pickup, then remove the soldered joint (open).



● **Rear view**

② Disconnect the three flexible cables.



● **Bottom view**

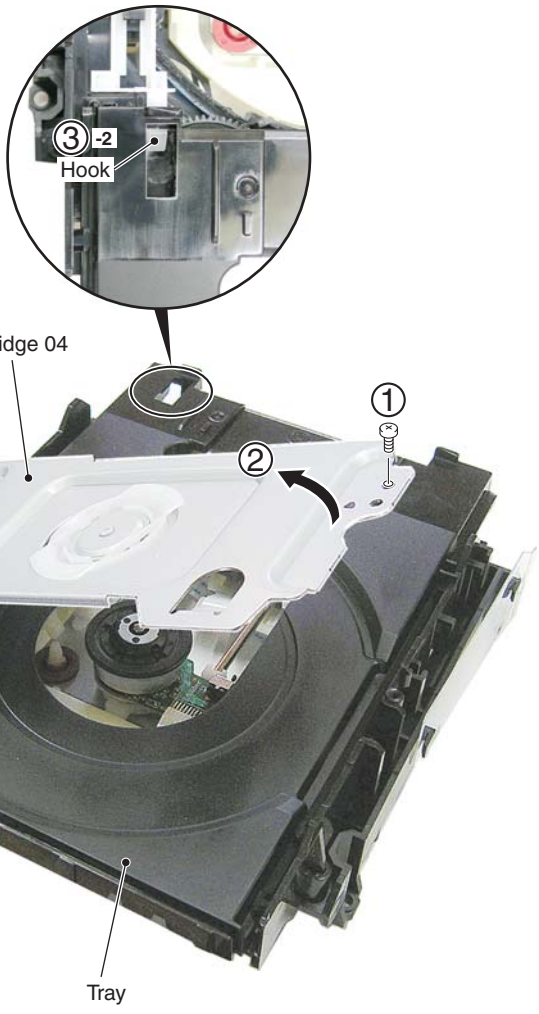
05 LOADER Assy

2 Bridge 04, Tray

① Remove the two screws.

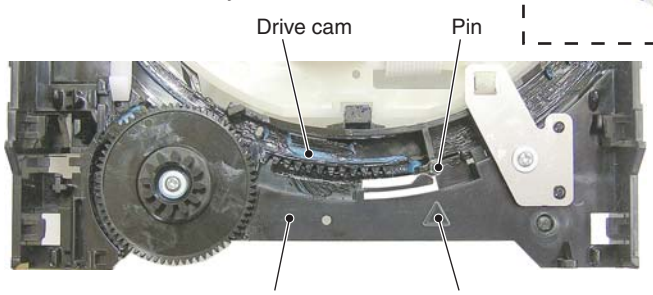
② Remove the bridge 04.

③ Pull out the tray, then remove it by pressing the hook.



Note when reinserting the tray

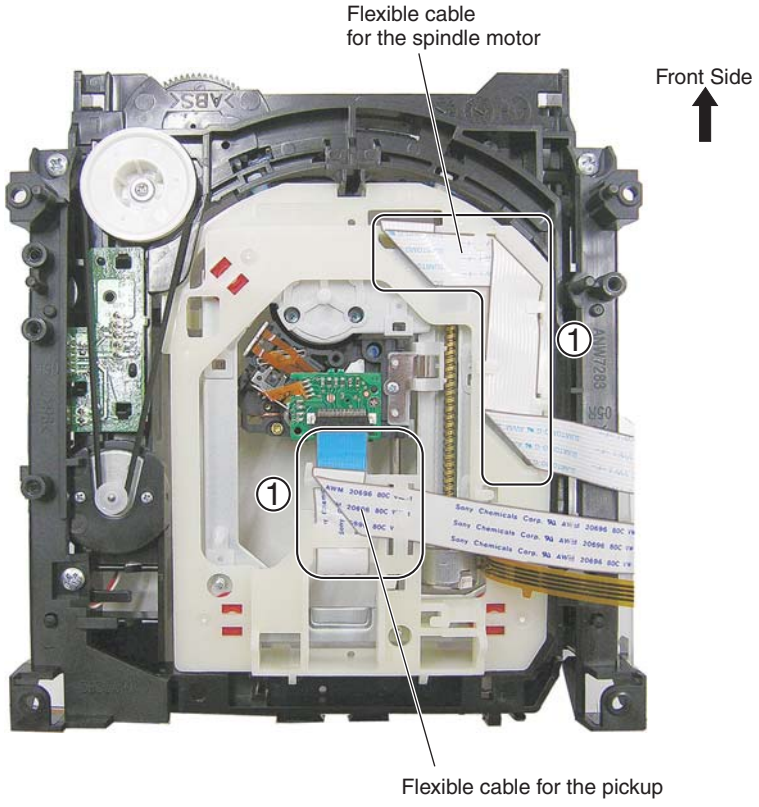
When reinserting the tray, first align the triangle printed on the loading base and the pin of the drive cam, then insert the tray.



Front side

3 Traverse Mechanism Assy-S

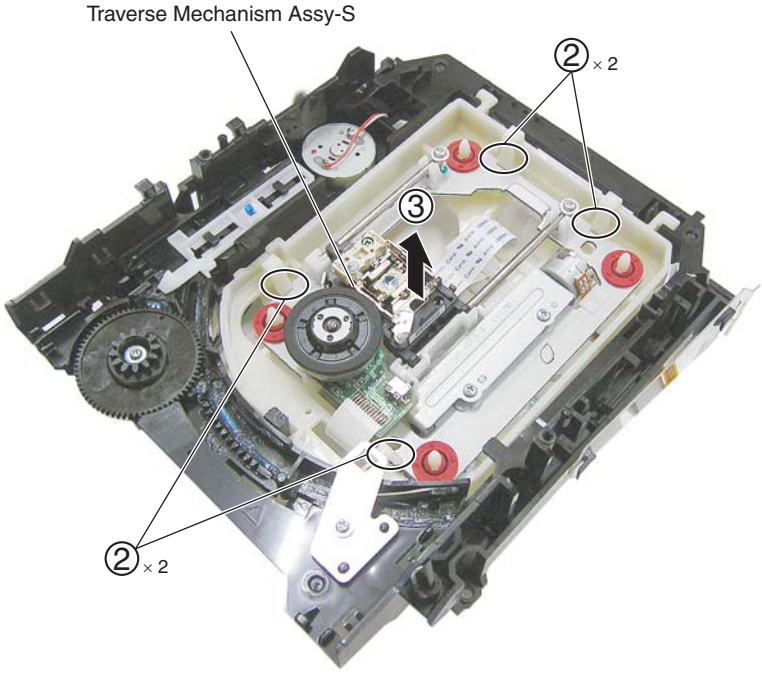
① Dislodge the two flexible cables from their factory placement.



● **Bottom view**

② Unhook the four hooks.

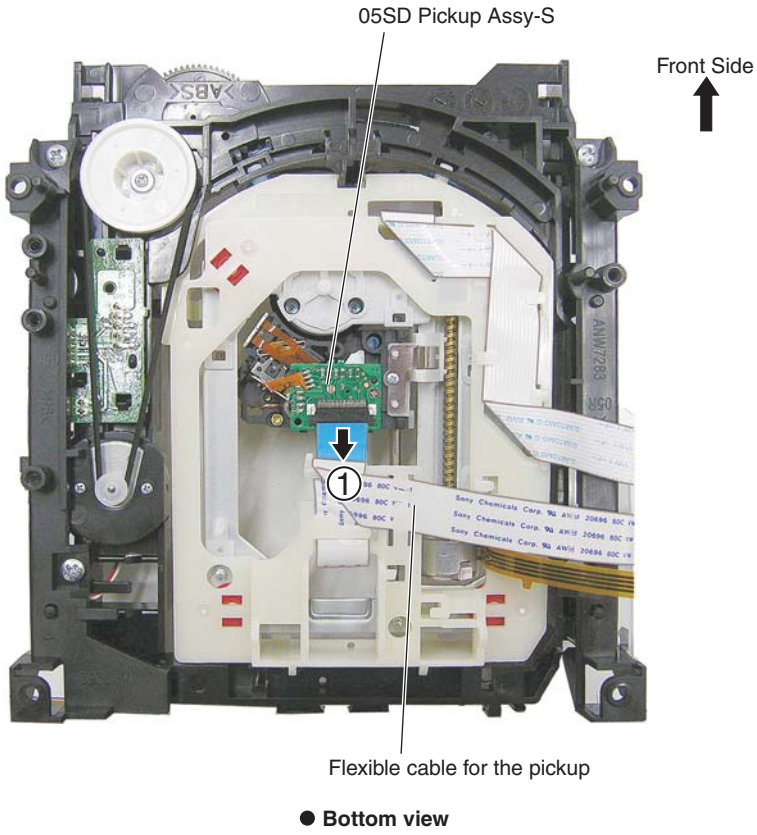
③ Remove the Traverse Mechanism Assy-S



4 05SD Pickup Assy-S

Note: The 05SD Pickup Assy-S can be removed without removing the Traverse Mechanism Assy-S.(shown as Step 3.)

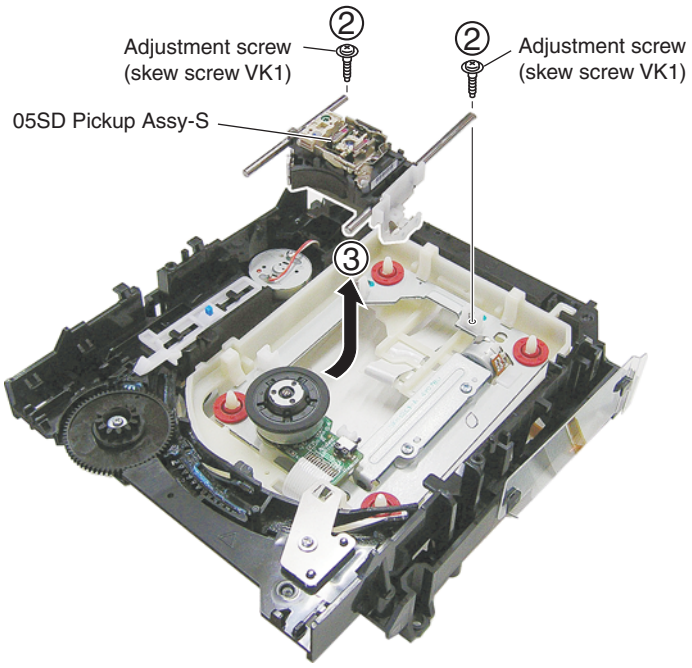
① Disconnect the flexible cable for the pickup.



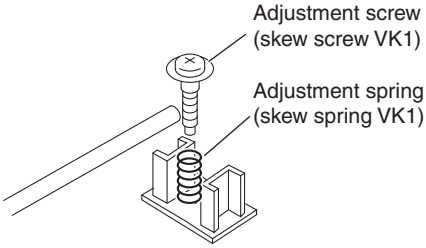
● **Bottom view**

② Remove the two adjustment screws.

③ Remove the 05SD Pickup Assy.

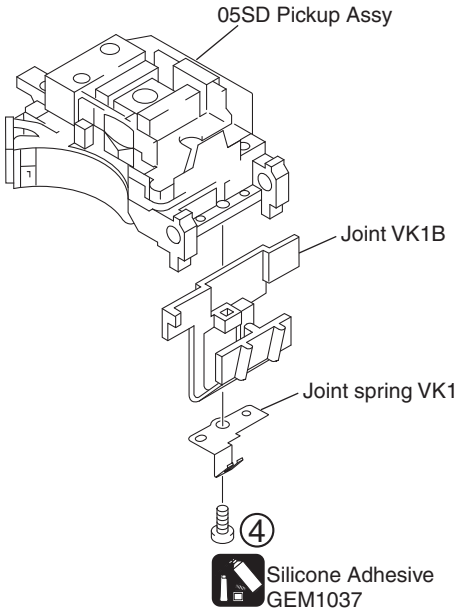


Note: Be careful not to lose the adjustment spring (skew spring VK1).



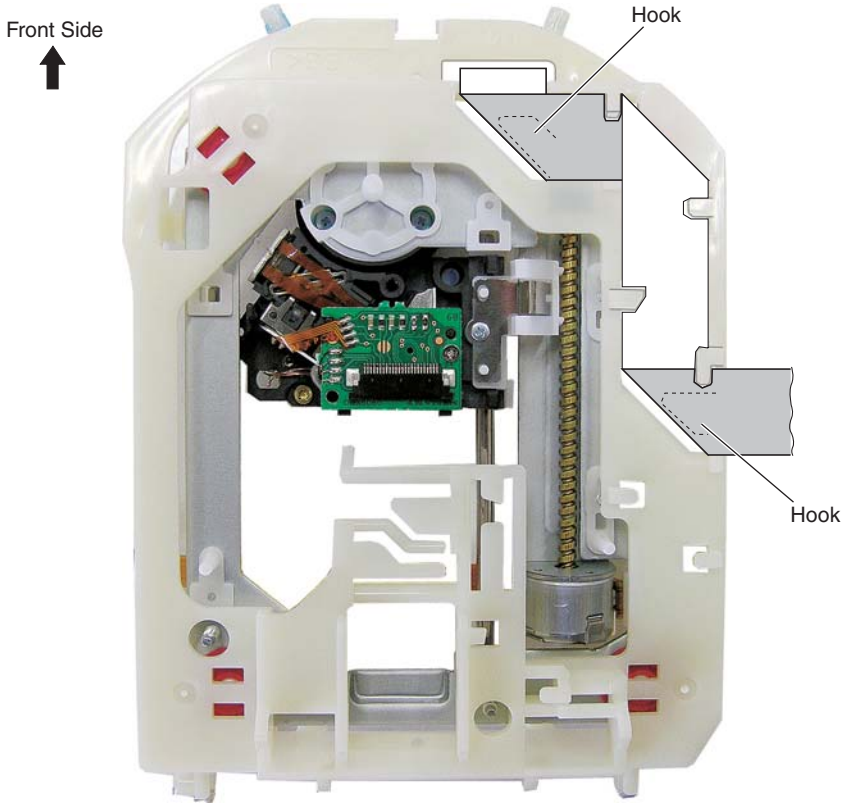
④ Remove the one screw.

Note: The screw is secured with the silicone adhesive.
Make sure to apply the silicone adhesive after reattaching the screw.



Arrangement of the flexible cable for the spindle motor

: Conductive surface



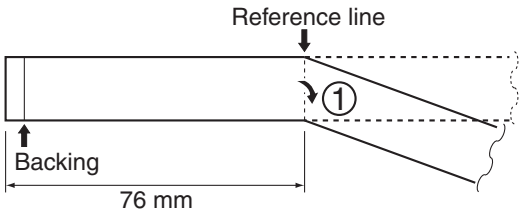
● **Bottom view**

Arrangement of the flexible cable for the pickup

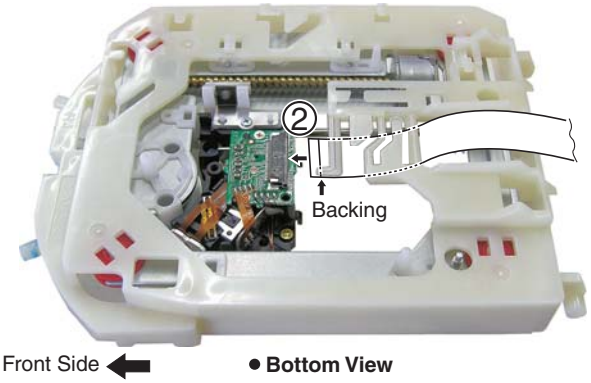
: Conductive surface

Note:
Be sure to move the 05SD Pickup Assy to the innermost perimeter.

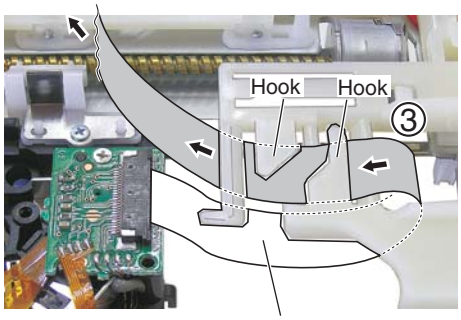
① Fold the flexible cable for the pickup with the backing outward in the illustration below.



② Attach the flexible cable for the pickup to the connector.



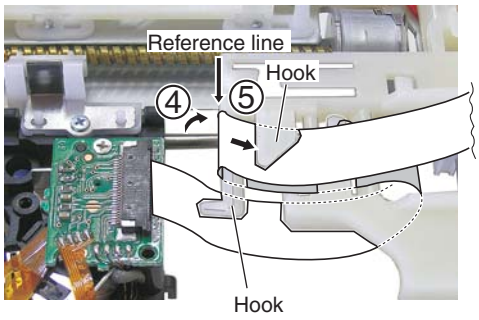
③ Pass the flexible cable through the hook.



Make sure that the cable is loose.

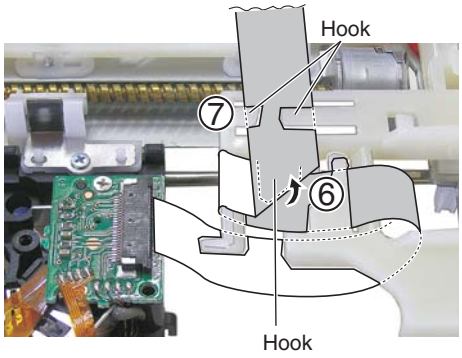
④ Hook the part folded in Step ① to the hook.

⑤ Pass the flexible cable through the hook.



⑥ Fold the flexible cable along the hook.

⑦ Pass the flexible cable through the hook.



8. EACH SETTING AND ADJUSTMENT

8.1 ADJUSTMENT

[1] ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Items

[Mechanism Part]

❶ Tangential and Radial Height Coarse Adjustment

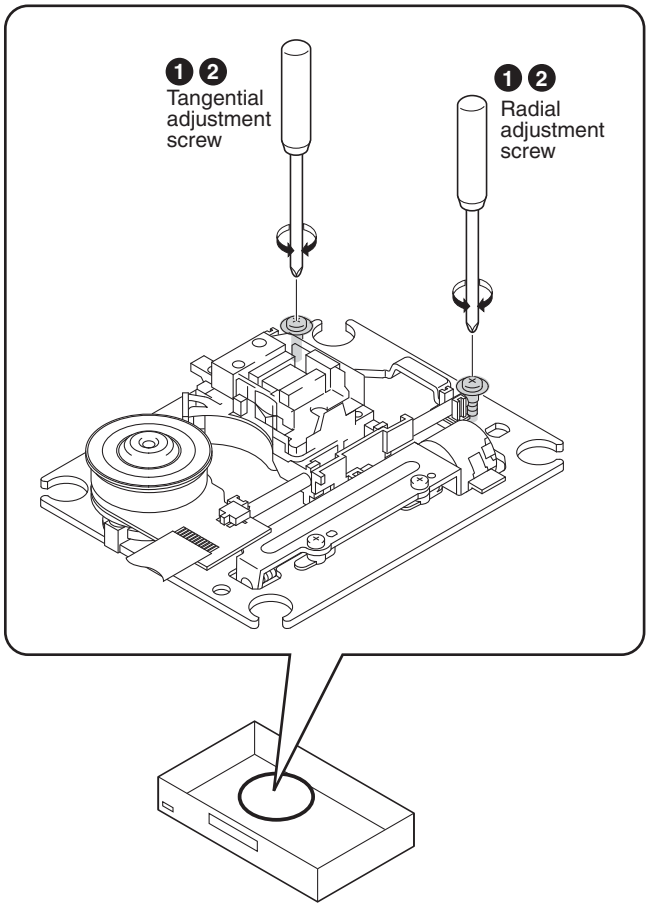
❷ DVD (CD) Error Rate Adjustment

[Electrical Part]

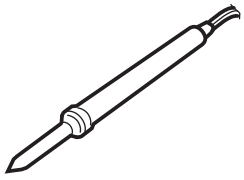
Electrical adjustments are not required.

■ Adjustment Points (Mechanism Part)

Cautions: After adjustment, adjustment screw locks with the Screw tight.



[2] JIGS AND MEASURING INSTRUMENTS

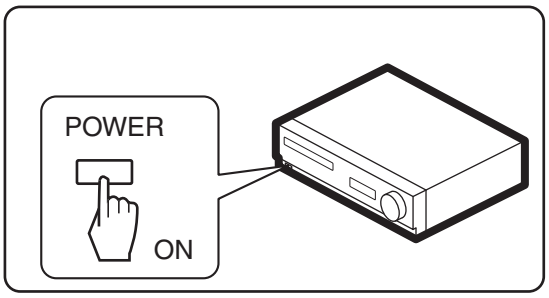
 ⊕ Screwdriver (large)	 ⊕ Screwdriver (medium)	 Test mode remote control unit (GGF1381)	
 ⊕ Precise screwdriver	 DVD test disc (GGV1025)	 Soldering iron	Screw tight (GYL1001)

[3] NECESSARY ADJUSTMENT POINTS

When	Adjustment Points		
■ Exchange Parts of Mechanism			
Exchange the 05SD Pickup Assy	Mechanical point	❶, ❷	∗ After adjustment, screw locks with the Screw tight.
	Electric point	———	
Exchange the Traverse Mechanism Assy-S	Mechanical point	———	
	Electric point	———	
Exchange the Spindle Motor	Mechanical point	❷	∗ After adjustment, screw locks with the Screw tight.
	Electric point	———	
■ Exchange PCB Assy			
Exchange PC Board LOAB and DVDM ASSYS	Mechanical point	———	
	Electric point	———	

[4] TEST MODE

POWER ON



How to display the error rate

■ **Turn the power on in Service Test Mode.**

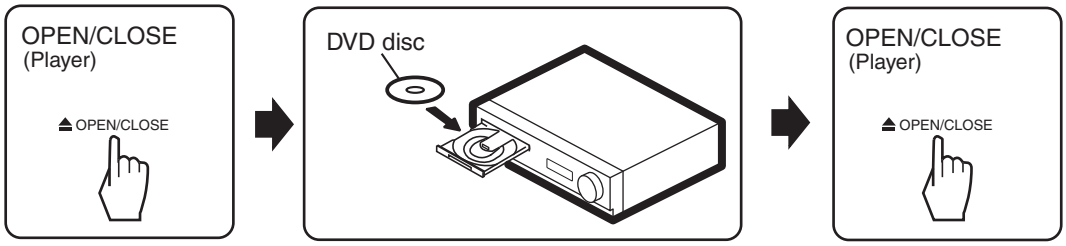
Short circuit the STEST TEST land on the MAIN ASSY and then turn on the AC power.
(See "6.1 SERVICE TEST MODE")

∗DISC Adjustment Mode

Limited only to Service Test Mode, it is used for adjusting the servo for playing back DVDs.
Only the service test DVD (GGV1025) is supported.
Operations using other DVDs are not guaranteed.
The DVD supports only basic playback, measurement of the error rate, track selection, and SCAN.
Other operations are not guaranteed.

DISC SET

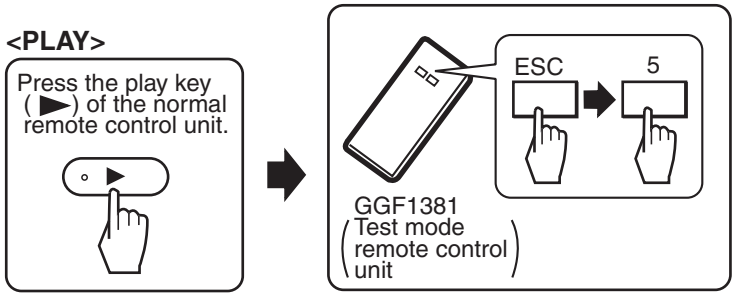
<TRAY OPEN>

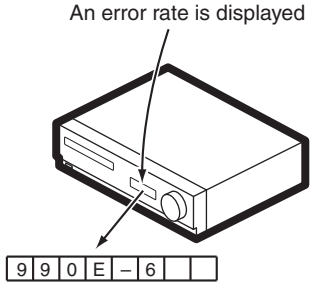


<TRAY CLOSE>

TEST MODE: PLAY

<PLAY>



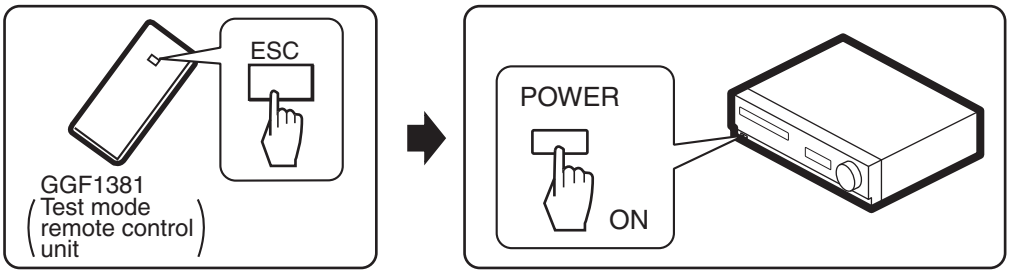


The error rate is displayed as above.
But this means " 9.90E – 6 ".

Notes:
- The audio signal are outputted during the test mode.
- The SKIP key and the SCAN key are effective during the test mode.

Note: Even if you intend to continue using the unit after using Service Test Mode, be sure to turn the power off and then back on.

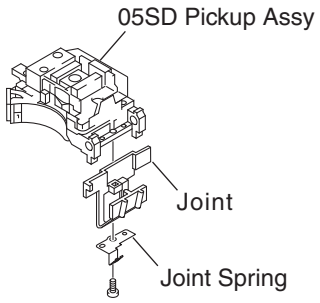
TEST MODE: OFF



1 Tangential and Radial Height Coarse Adjustment

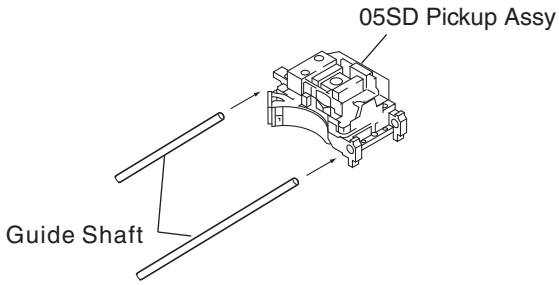
START

- Remove the 05SD Pickup Assy from the Traverse Mechanism Assy-S.
- Remove the joint and the joint spring of the 05SD Pickup Assy.

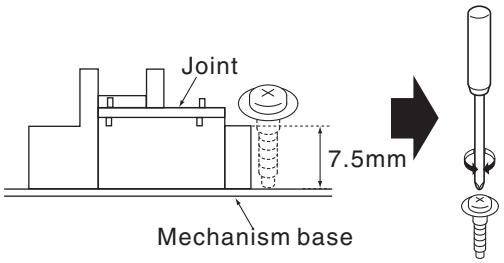


Note:
Before removing the flexible cable for the pickup, soldering of the pickup circuit is necessary.
For details, see "1 05 LOADER ASSY of 7. DISASSEMBLY".

- Pass through the guide shaft to a new 05SD Pickup Assy.
- Attach it to the Traverse Mechanism Assy-S.



- Put the joint between the Tangential (or Radial) adjustment screw and the mechanism base and turn each screw to adjust the height.
(Refer to "8.1.1 ADJUSTMENT ITEMS AND LOCATION".)



- Attach the Traverse Mechanism Assy-S to the 05 LOADER Assy.
- Turn it over and attach the joint and the joint spring.
- Arrange the flexible cables.
(Refer to "7. DISASSEMBLY".)

2 DVD Error Rate Adjustment

Notes:
- Use disc: GGV1025

START

- Play the DVD test disc at inner track
- Display ERROR RATE on the OLED display

ESC 5

Traverse Mechanism Assy-S
Adjust the radial adjustment screw so that ERROR RATE becomes around "**5E-4**". A

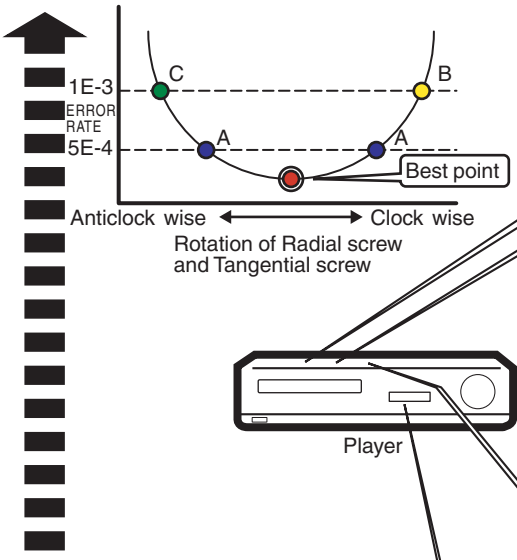
9 9 0 E – 6

The error rate is displayed as above.
But this means " 9.90E – 6 ".

- Play the DVD test disc at inner track (around #30000) ➡ (Play title1)
* At stop mode, press 1, then ENTER key of the set remote control.

Traverse Mechanism Assy-S
Fasten the radial adjustment screw so that ERROR RATE becomes around "**1E-3**". B

- Unfasten the radial adjustment screw by 90 degrees step till ERROR RATE becomes around "**1E-3**" again . C
- Record the number of rotation (N1).
- Fasten the radial adjustment screw till the number of rotation becomes harf of N1. Best Radial point



Player

ESC
Service mode end

- Play the DVD test disc at outer track (around #200000) ➡ (Play title 22)
* At stop mode, press 2, 2, then ENTER key of the set remote control.

➡ Service mode
ESC 5

Traverse Mechanism Assy-S
Fasten the tangential adjustment screw so that BER becomes around "**1E-3**". B

- Unfasten the tangential screw by 90 degrees step till ERROR RATE becomes around "**1E-3**" again . C
- Record the number of rotation (N1).
- Fasten the tangential adjustment screw till the number of rotation becomes harf of N1. Best tangential point

ESC
Service mode end

Disc playback normally.
- The measurement of block error rate

ESC 5

CHECK
In this check, the error rate that is less than "**5E-5**"is better.

OK

NG

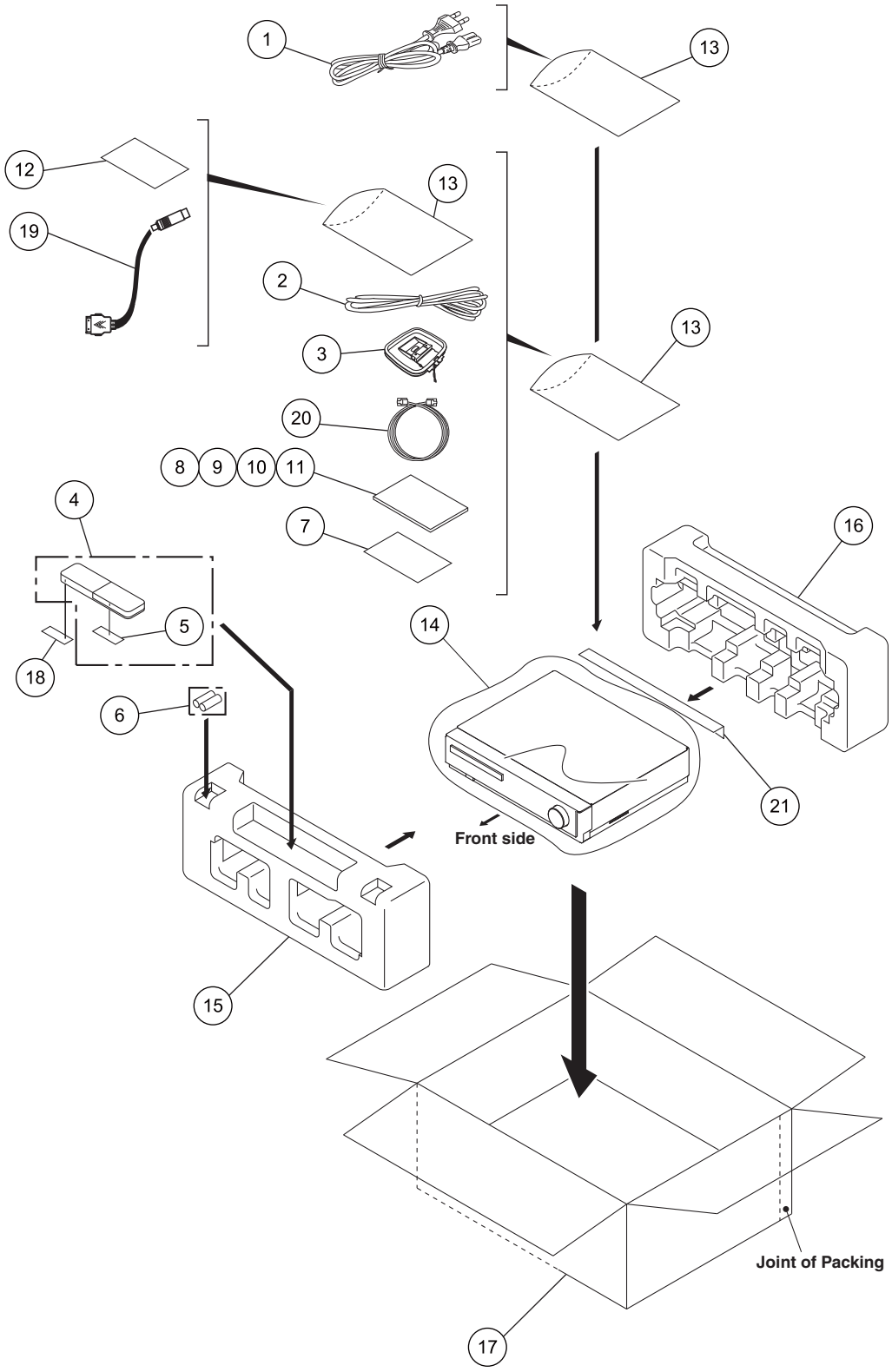
If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight.
Screw tight: GYL1001

Turn the POWER OFF in case of NG once, and perform the adjustment once again.

9. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on product are used for disassembly.*
● *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

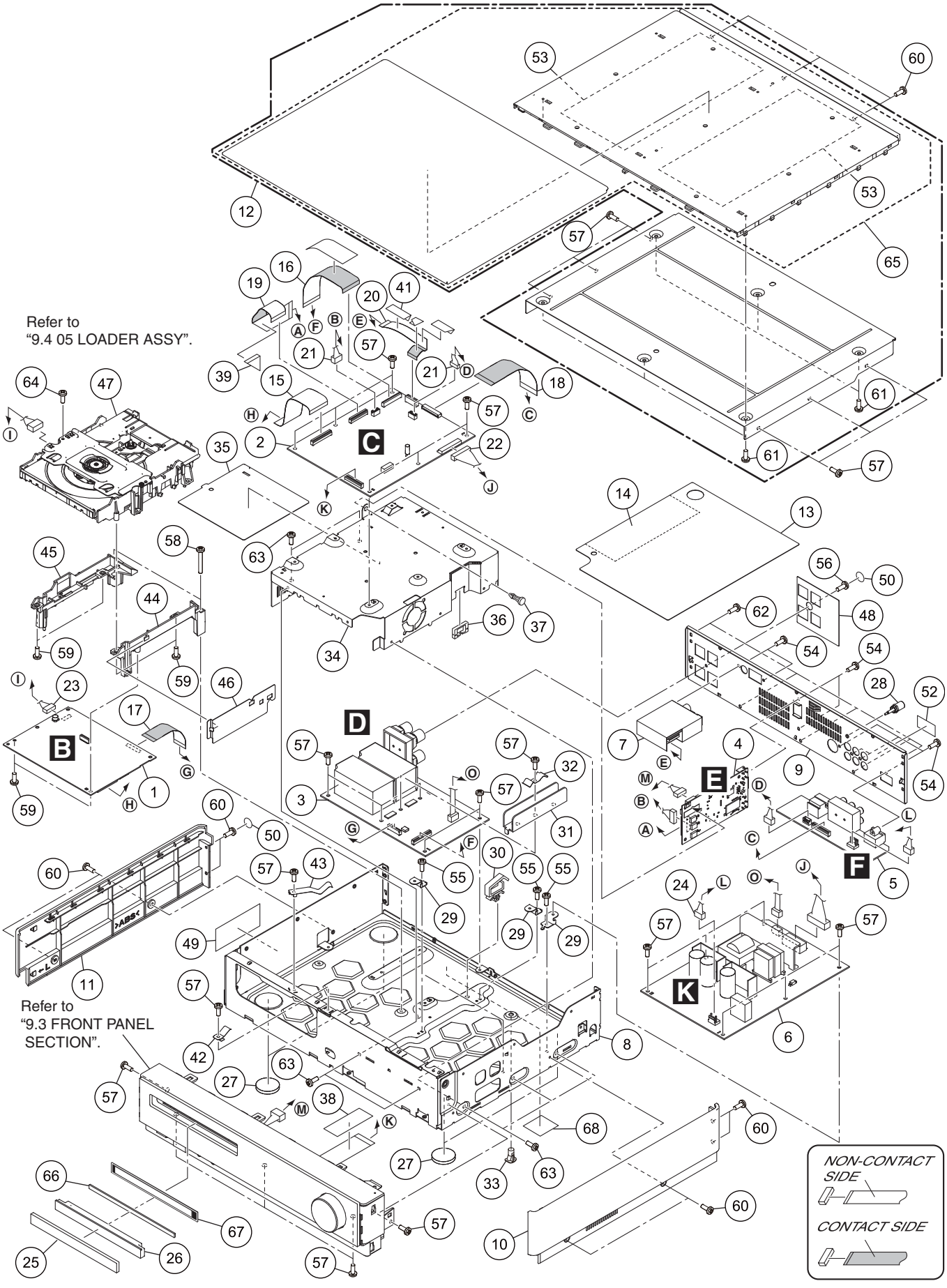
9.1 PACKING SECTION



PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
⚠	1	AC Power Cord	ADG1127
	2	FM Antenna	ADH7030
	3	Loop Antenna	ATB7013
	4	Remote Control	AXD7523
	5	Battery Cover	VZN1025
NSP	6	Battery (R6) 2P	XEX3002
NSP	7	Warranty Card	ARY7111
	8	Operating Instructions (English/French)	ARE7641
	9	Operating Instructions (German/Italian)	ARC7808
	10	Operating Instructions (Spanish/Dutch)	ARC7809
	11	Operating Instructions (Russian)	ARC7810
	12	iPod Caution Card	ARM7111
NSP	13	Polyethylene Bag	AHG7117
	14	Nonwoven Sheet	AHG7137
	15	Front Pad HQ	AHA7476
	16	Rear Pad HQ	AHA7477
	17	Packing Case	AHD8595
	18	Label (WEEE)	ARW7322
	19	iPod Control Cable	ADE7126
	20	LAN Cable	VDE1098
NSP	21	Spacer HQ	AHC7044

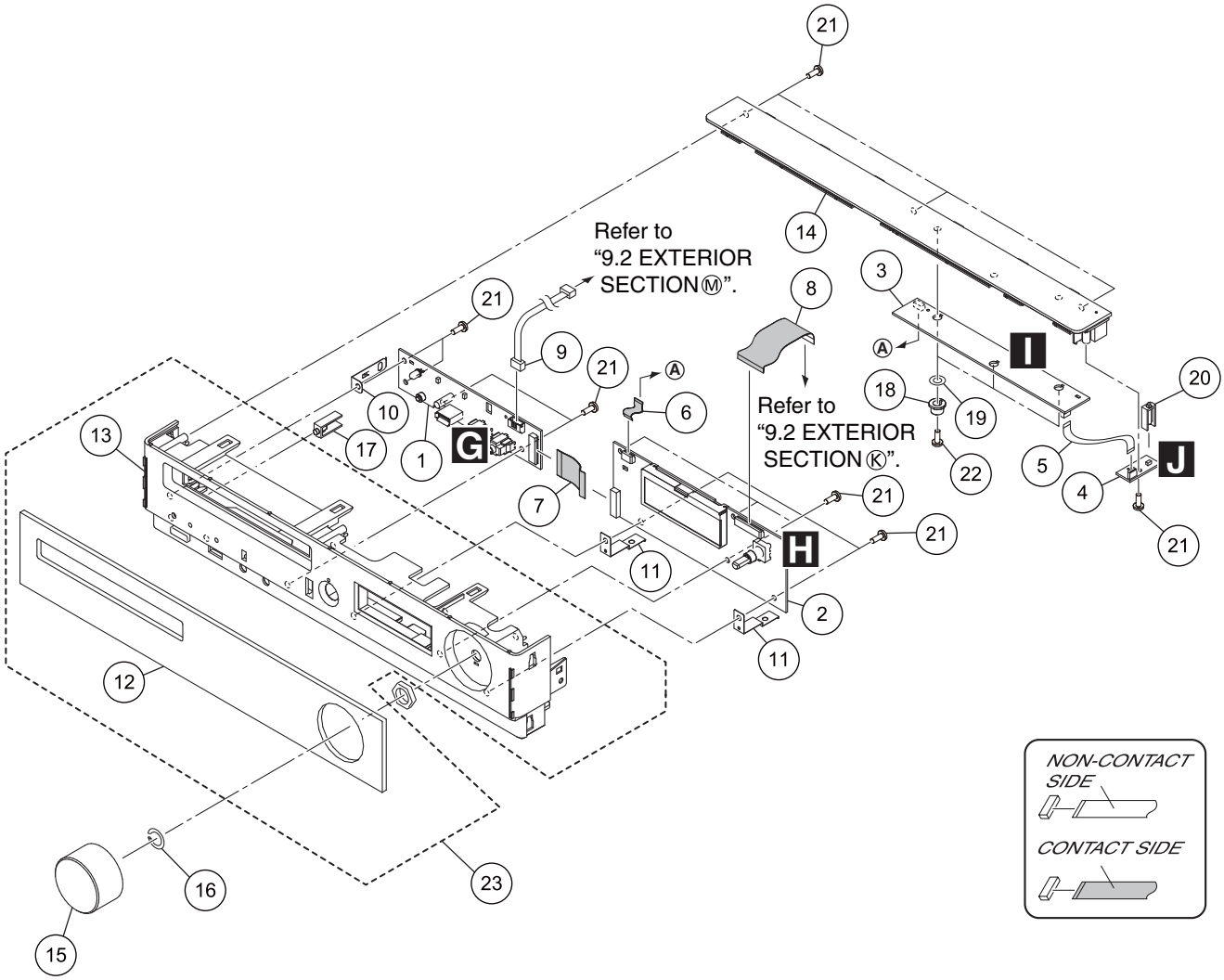
9.2 EXTERIOR SECTION



EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	DVDM ASSY	AWM8099
	2	MAIN ASSY	AWU8322
	3	AMP ASSY	AWU8326
	4	NETWORK ASSY	AWX9240
	5	CONNECTOR ASSY	AWU8319
⚠	6	POWER SUPPLY UNIT	AWR7050
	7	FM/AM TUNER UNIT	AXX7248
NSP	8	Chassis HQ	ANA7212
	9	Rear Panel HQ WYV	ANC8537
	10	Side Panel L HQ	AAK8453
	11	Side Panel R HQ	AAK8454
	12	Top Panel Assy HQ	AXG7386
	13	Top Barrier HQ	AEC7580
	14	Top Cushion HQ	AEB7388
	15	29P FFC/60V	ADD7622
	16	27P FFC/60V	ADD7623
	17	17P FFC/60V	ADD7624
	18	25P FFC/60V	ADD7626
	19	23P FFC/60V	ADD7627
	20	11P FFC/60V	ADD7628
	21	Connector Assy	PF04PP-C10
	22	Connector Assy	PF12EE-S17
	23	Connector Assy	PG05KK-E07
	24	4P Lead With Housing	ADX7587
NSP	25	Tray Cap HQ	AAK8402
NSP	26	Traycap Mould HQ	AMR7532
	27	HQ Leg	AEC7577
	28	Terminal Screw	AKE-031
	29	PCB Holder HQ	ANG7597
	30	Locking Wire Saddle	AEC7589
	31	Heat Sink HQ	ANH7205
	32	HS Holder HQ	ANG7596
	33	PCB Holder	AEC7057
	34	Shield Case HQ	ANK7133
	35	Primary Barrier	AEC7575
	36	Edge Saddle	AEC7590
NSP	37	PCB Holder	PNW1706
	38	FFC Cusion	AEB7373
	39	FFC Cushion A DM	AEB7377
	40	• • • • •	
	41	FFC Cushion HQ	AEB7389
	42	Earth Spring W5.1	ABH7240
	43	Earth Mecha Spring	ABH7251
	44	Adaptor05 L	XNW3014
	45	Adaptor05 R	XNW3015
	46	Mecha Barrier	AEC7581
NSP	47	Loader Assy	VWT1230
	48	SP Sheet HQ	AEC7576
	49	Laser Caution	PRW1608
	50	Cushion Circle 14B	AED7081
	51	• • • • •	
NSP	52	POSlabel Assy	AXW7019
	53	Acetate Tape	AED7109
	54	Screw	BBZ30P080FCC
	55	Round End Screw 3x6	ABA7140
	56	Screw	BBT30P100FCC
	57	Screw	IBZ30P060FCC
	58	Screw	XBA3015
	59	Screw	BBZ30P080FNI
	60	Screw	BBZ30P080FTB
	61	Screw	BPZ30P060FTC
	62	Screw	BBT30P060FCC
	63	Screw	ABA1192
	64	Screw	VBA1094
	65	Top Panel Assy	AXG7387
	66	Tray Cushion HQ	AEB7403
	67	Tray Spacer	PEB1326
NSP	68	POS Assy	AXW7019

9.3 FRONT PANEL SECTION



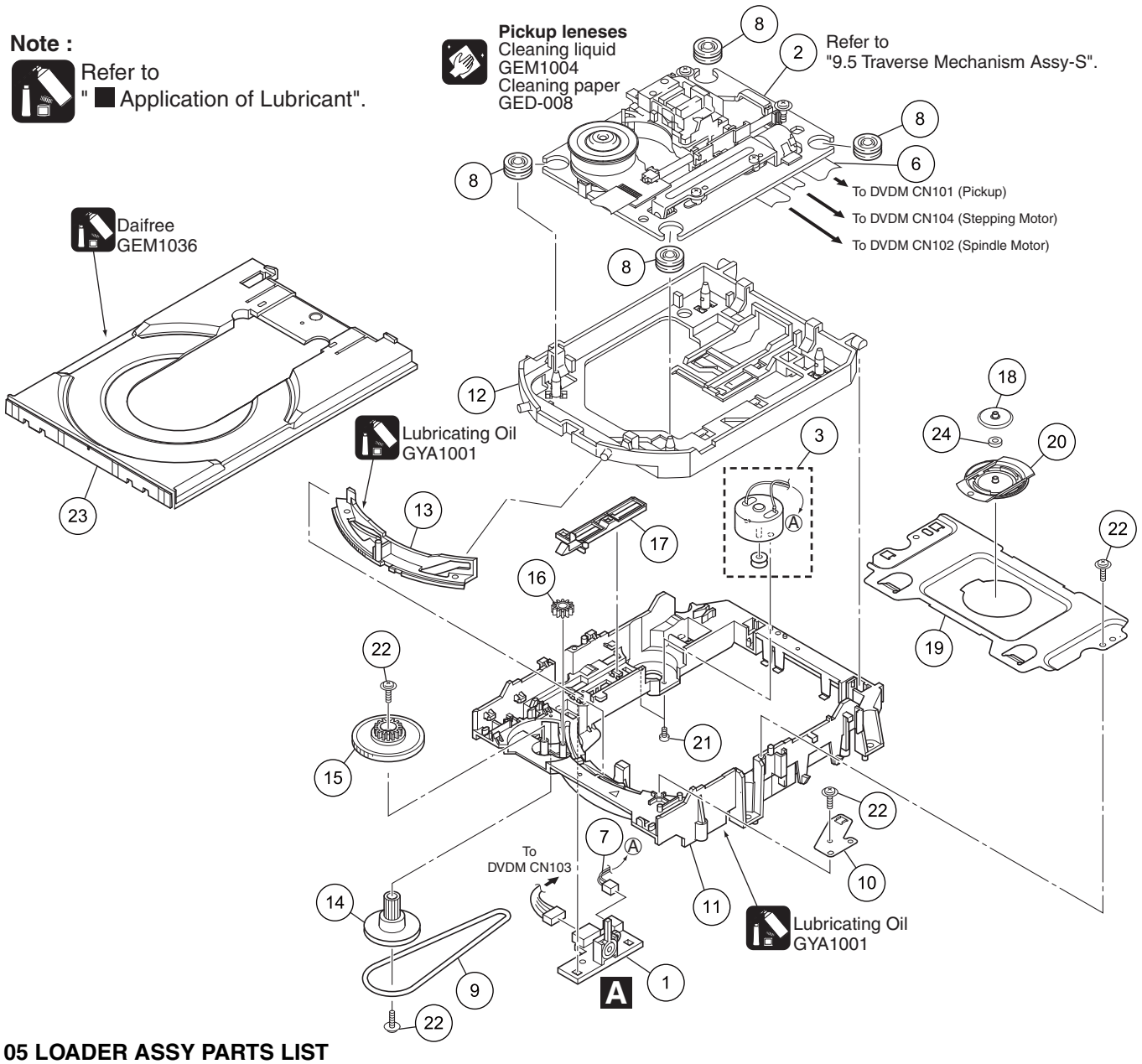
FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FRONT ASSY	AWU8321
	2	DISPLAY ASSY	AWU8328
	3	KEY ASSY	AWU8329
	4	LED ASSY	AWU8330
	5	4P FFC/60V	ADD7618
	6	5P FFC/60V	ADD7619
	7	21P FFC/60V	ADD7620
	8	25P FFC/60V	ADD7621
	9	5P Lead With Housing	ADX7585
	10	Earth Plate DM	ANG7552
	11	Earth Plate B	ANG7602
NSP	12	Window HQ	AAK8458
NSP	13	Panel Base Assy HQ	AXG7383
	14	Touch Panel HQ	AAK8448
	15	Vol.knob Assy HQ	AAA7054
	16	Ring	ABH7213
	17	Front Lens HQ	AAK8415
	18	PCB Mould HQ	AMR7533
	19	TS Cushion	AEB7387
	20	Touch Lens HQ	AAK8400
	21	Screw	BBZ30P080FNI
	22	Screw	ABA7127
	23	Fontpanel Assy HQ	AXG7393

9.4 05 LOADER ASSY

Note :

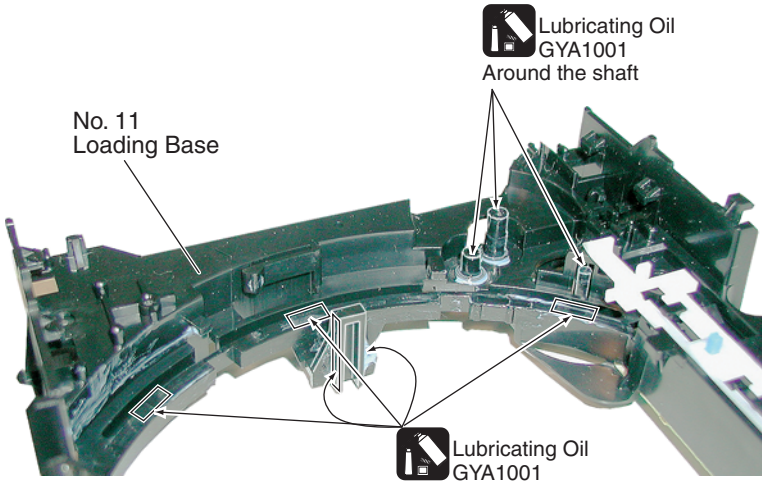
Refer to
" ■ Application of Lubricant".

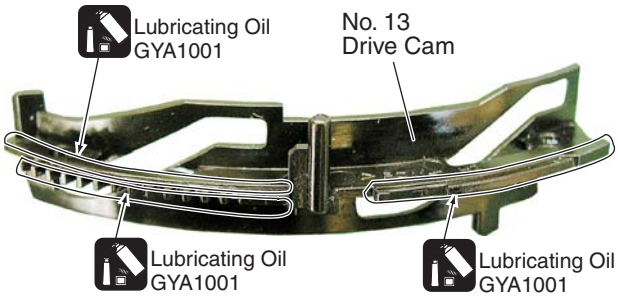


05 LOADER ASSY PARTS LIST

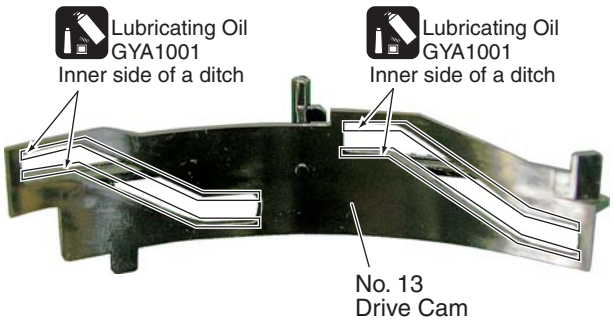
Mark	No.	Description	Part No.
NSP	1	LOAB Assy	VWG2346
	2	Traverse Mechanism Assy-S	DXX2581
	3	Loading Motor Assy	VXX2912
	4	• • • • •	
	5	• • • • •	
	6	Flexible Cable (24P)	ADD7546
	7	Connector Assy 2P	VKP2253
	8	Floating Rubber	VEB1351
	9	Belt	VEB1358
	10	Stabilizer	VNE2253
	11	Loading Base	VNL1917
	12	Float Base 04	VNL1968
	13	Drive Cam	VNL1919
	14	Gear Pulley	VNL1921
	15	Loading Gear	VNL1922
	16	Drive Gear	VNL1923
	17	SW Lever	VNL1925
	18	Clamper Plate 04	VNE2342
	19	Bridge 04	VNE2343
	20	Clamper 04	VNL1969
	21	Screw	JGZ17P028FTC
	22	Screw	VBA1094
	23	Tray	VNL1920
	24	Clamp Magnet	VMG1029

Application of Lubricant



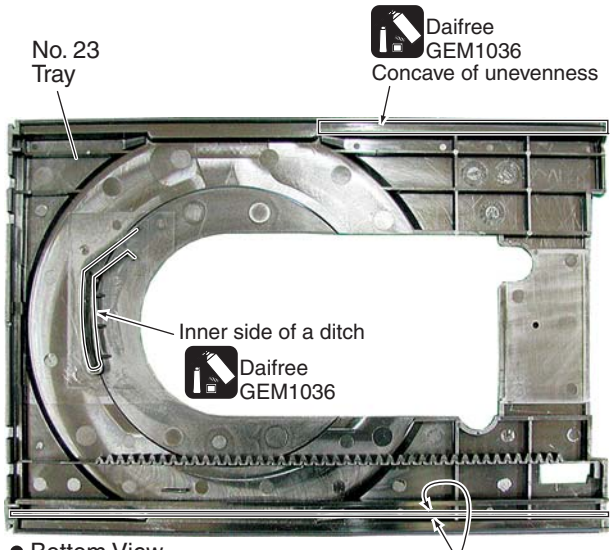


● Front View



● Rear View

● Top View

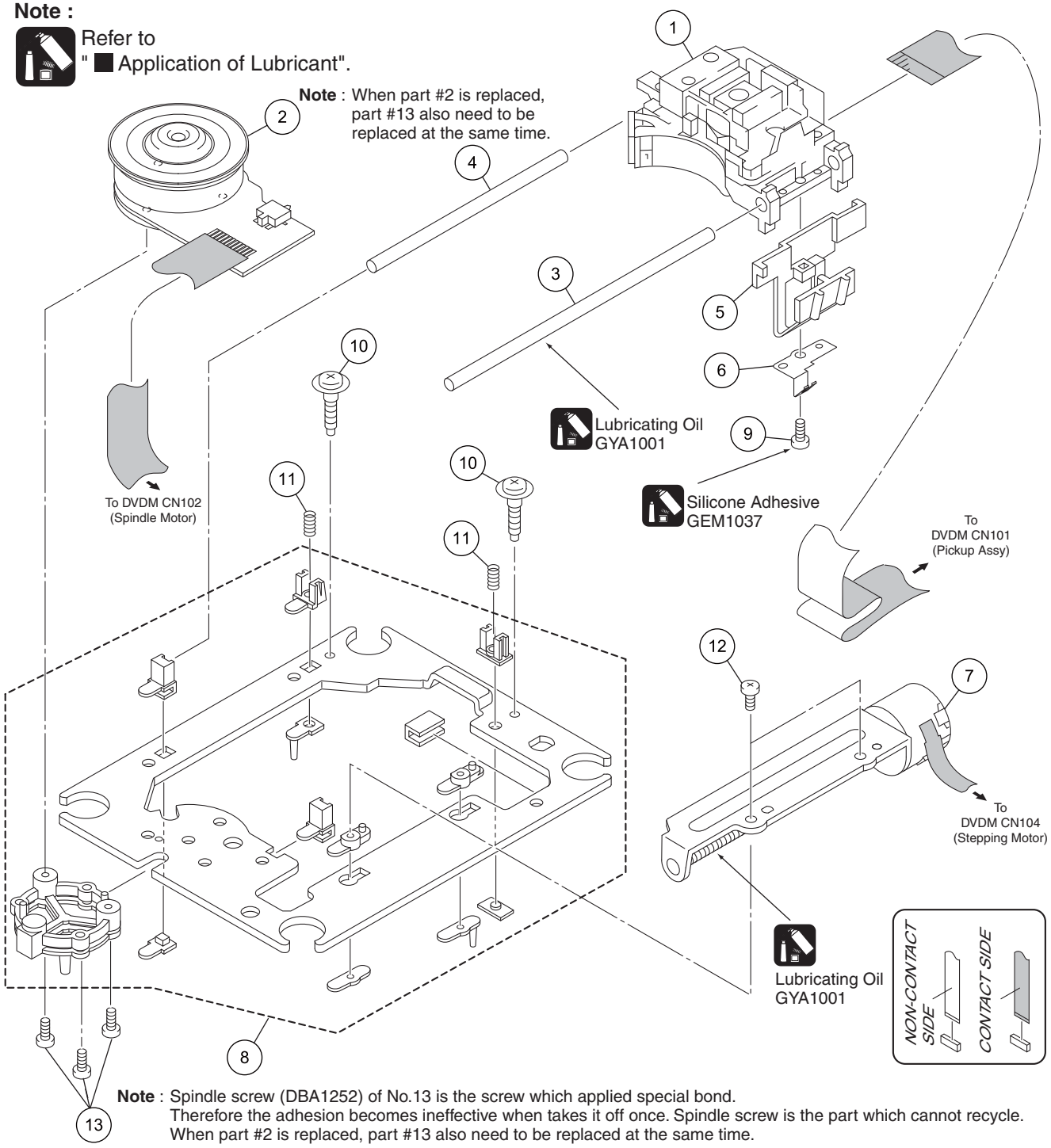


● Bottom View

9.5 Traverse Mechanism Assy-S

Note :

Refer to
" ■ Application of Lubricant".



Note : Spindle screw (DBA1252) of No.13 is the screw which applied special bond.
Therefore the adhesion becomes ineffective when takes it off once. Spindle screw is the part which cannot recycle.
When part #2 is replaced, part #13 also need to be replaced at the same time.

Traverse Mechanism Assy-S PARTS LIST

Mark	No.	Description	Part No.
⚠	1	05SD Pickup Assy-s	OXX8019
	2	Spindle Motor N200	DXM1197
NSP	3	Guide Shaft VK1	DLA1940
NSP	4	Sub Guide Shaft VK1	DLA1941
NSP	5	Joint VK1B	DNK4272
NSP	6	Joint Spring VK1	DBK1235
	7	Stepping Motor VK1	DXM1201
NSP	8	Mechanism Frame VK1	DNK4160
	9	Precision Screw VK1	DBA1209
	10	Skew Screw VK1	DBA1211
	11	Skew Spring VK1	DBH1516
NSP	12	Stepping Screw	DBA1205
	13	Spindle Screw VK1(for Service)	DBA1252

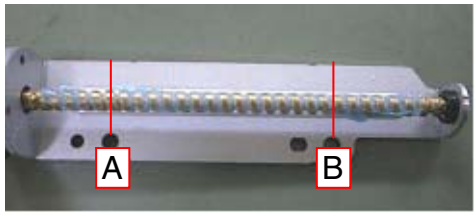
PRECAUTIONS WHEN REPLACING THE STEPPING MOTOR (DXM1201)

You must apply grease to the following locations when replacing the stepping motor. Follow the instructions below to apply grease to these locations.

(1) Stepping motor feed screw

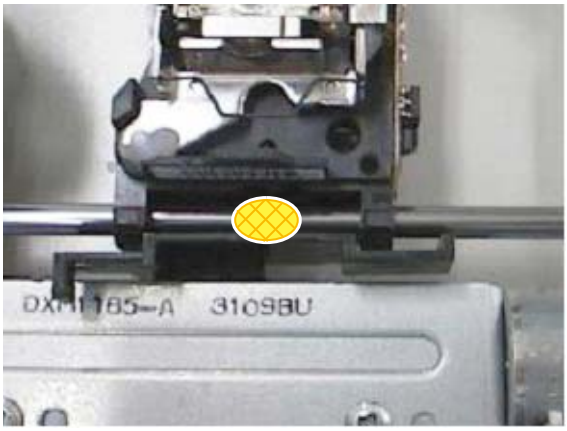
- Apply grease GYA1001 to the 3 locations shown in the picture
- Amount of grease: 3 ± 1 mg each for 3 locations

After applying GYA1001, smooth the grease evenly over the stepping motor feed screw, as shown in the picture.
Take care not to scratch the shaft.



Spread the GYA1001 grease from screw hole A to B shown in the picture.
Fibers or dirt in the grease have an adverse affect on operation and must be removed.

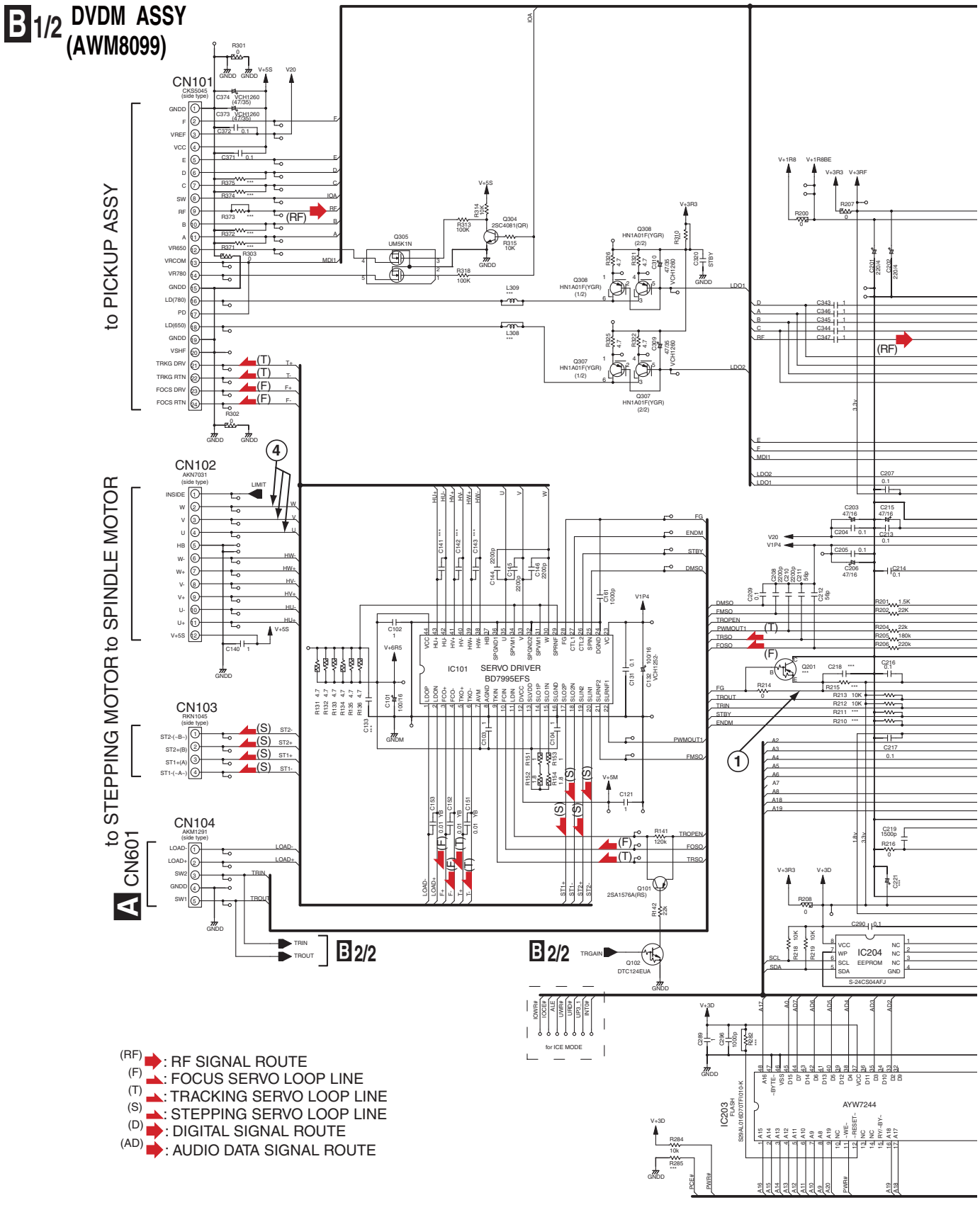
(2) Guide bar



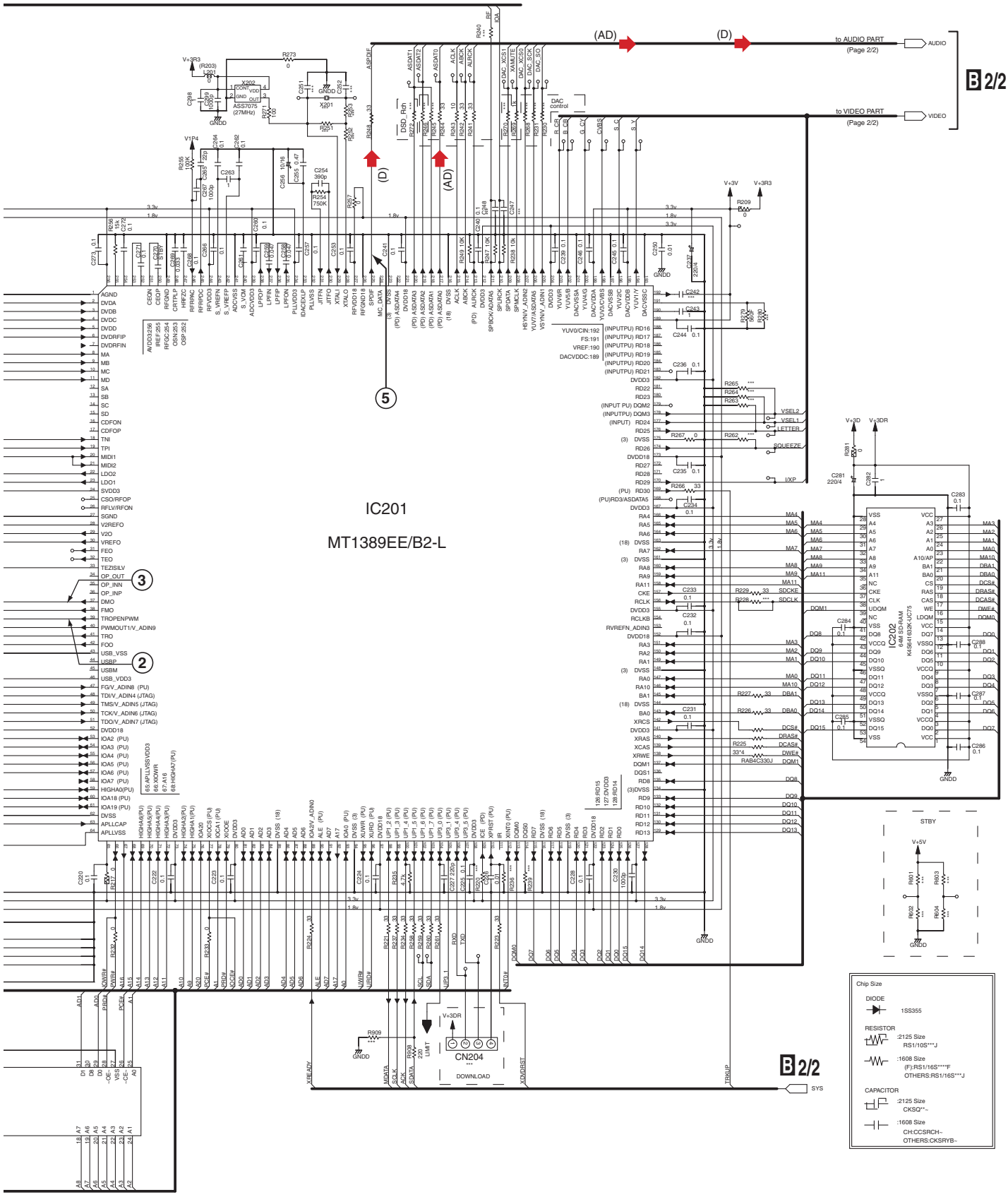
- Apply grease GYA1001 to the crosshatched area shown in the center of the picture
- Amount of grease: 2 ± 1 mg for 1 location

10. SCHEMATIC DIAGRAM

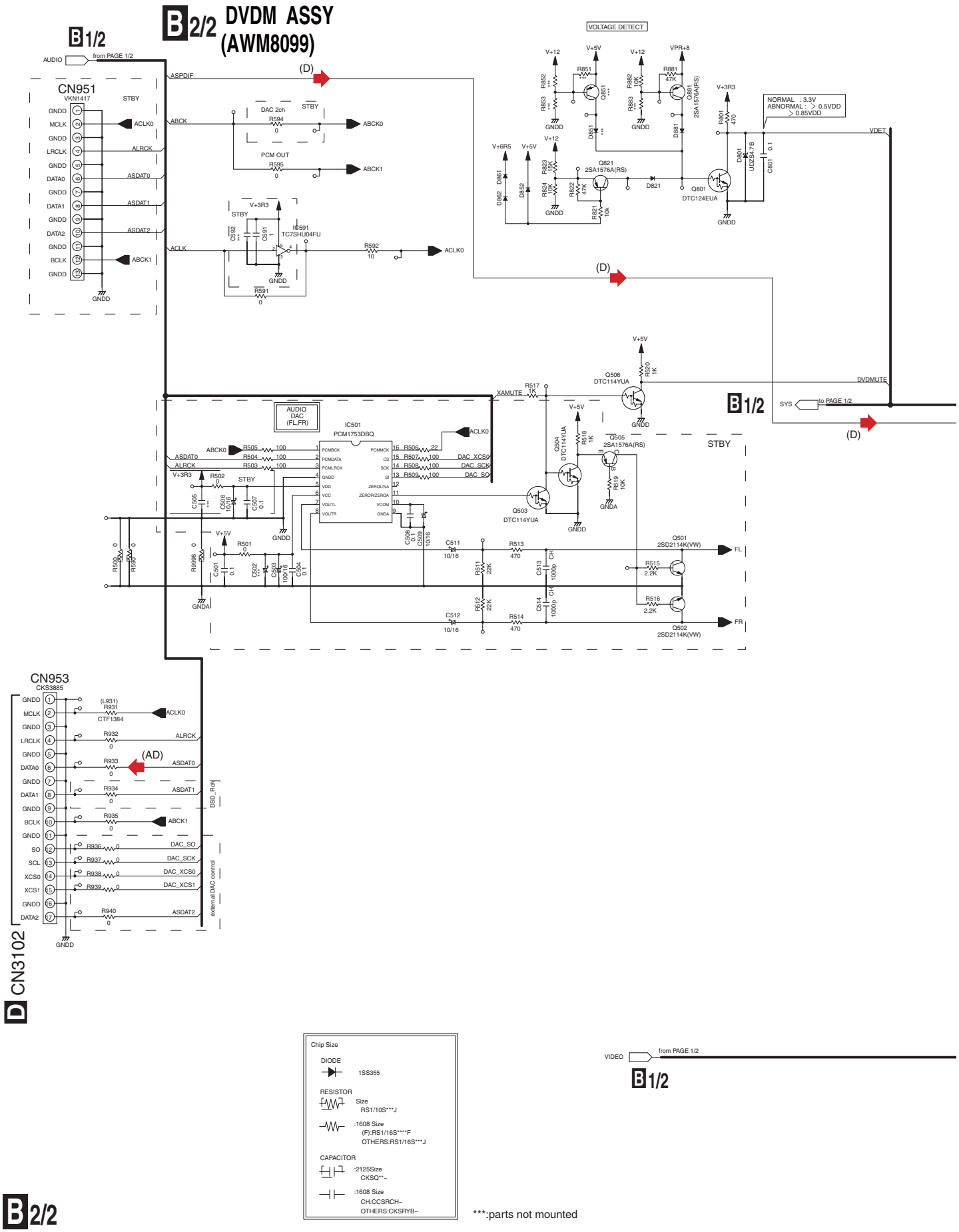
10.1 DVDM ASSY (1/2)

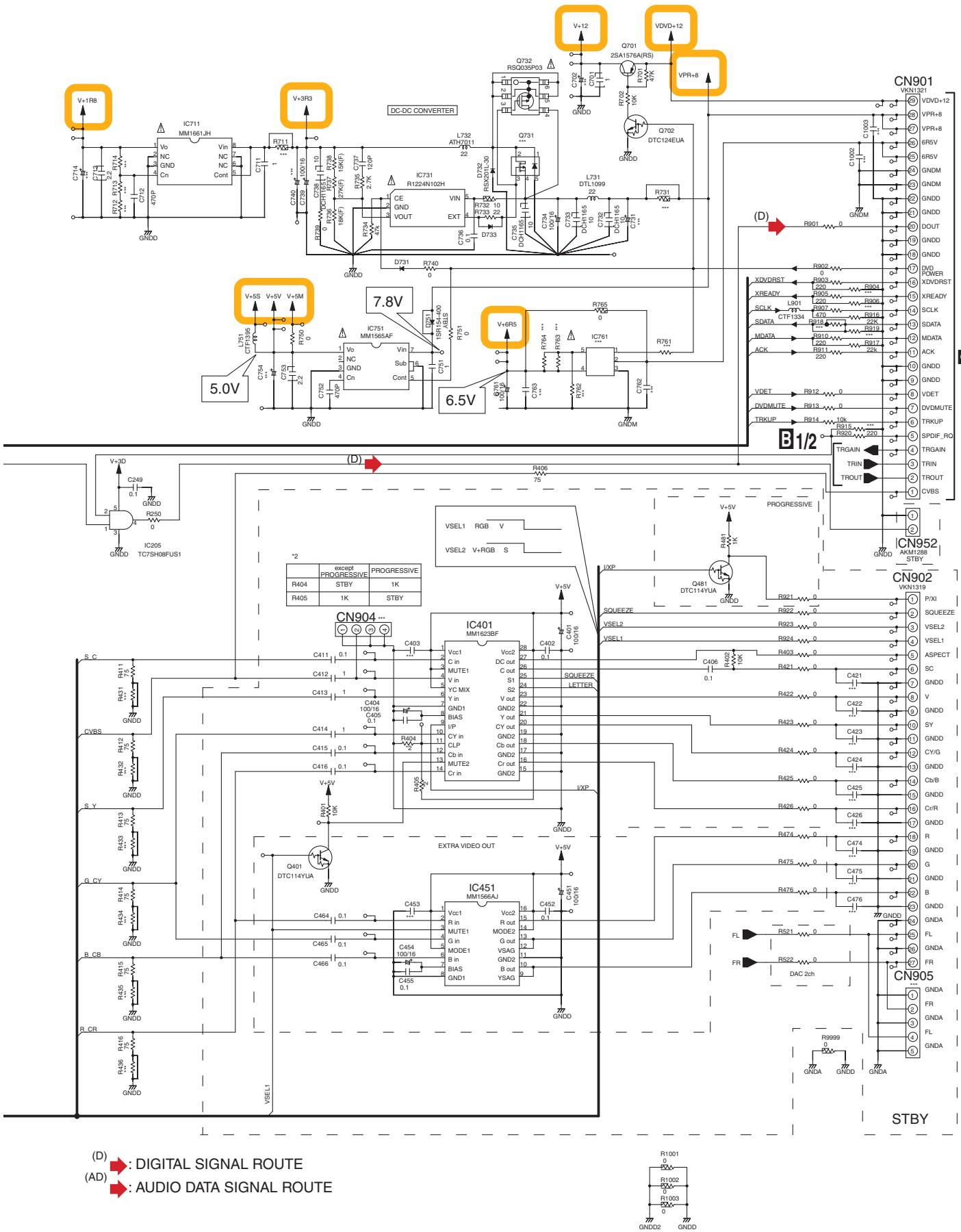


(RF): RF SIGNAL ROUTE
(F): FOCUS SERVO LOOP LINE
(T): TRACKING SERVO LOOP LINE
(S): STEPPING SERVO LOOP LINE
(D): DIGITAL SIGNAL ROUTE
(AD): AUDIO DATA SIGNAL ROUTE


IC201
MT1389EE/B2-L
IC202
64M SDRAM
K4S641632K-UC75
CN204
DOWNLOAD
to AUDIO PART
(Page 2/2)
AUDIO
to VIDEO PART
(Page 2/2)
VIDEO
SYS
B 2/2
B 1/2
Chip Size
DIODE
1SS355
RESISTOR
:2125 Size
RS1/10S***J
:1608 Size
(F):RS1/16S****F
OTHERS:RS1/16S***J
CAPACITOR
:2125 Size
CKSQ**~
:1608 Size
CH:CCSRCH~
OTHERS:CKSRYB~

10.2 DVDM ASSY (2/2)





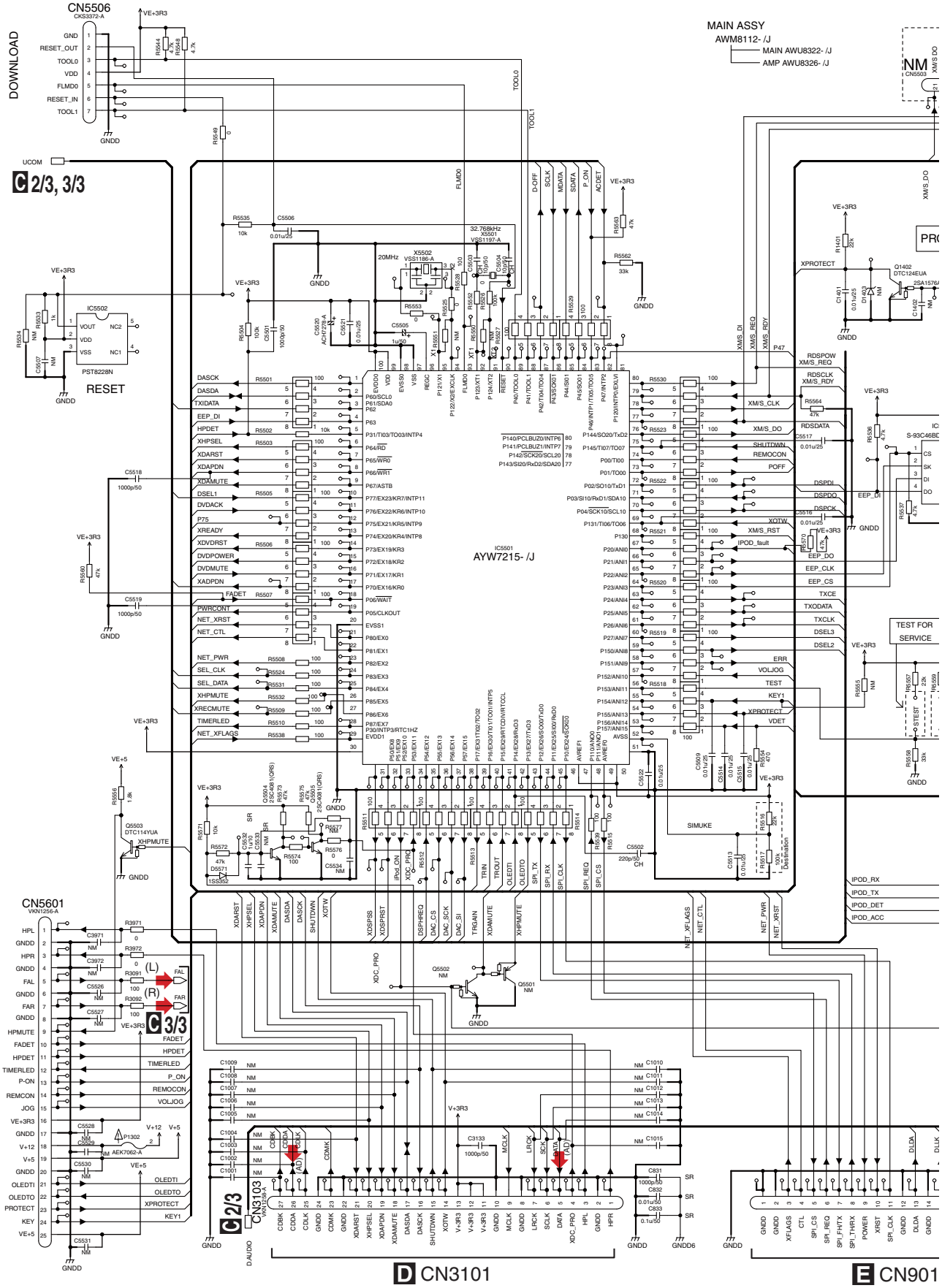
(D) : DIGITAL SIGNAL ROUTE

(AD) : AUDIO DATA SIGNAL ROUTE

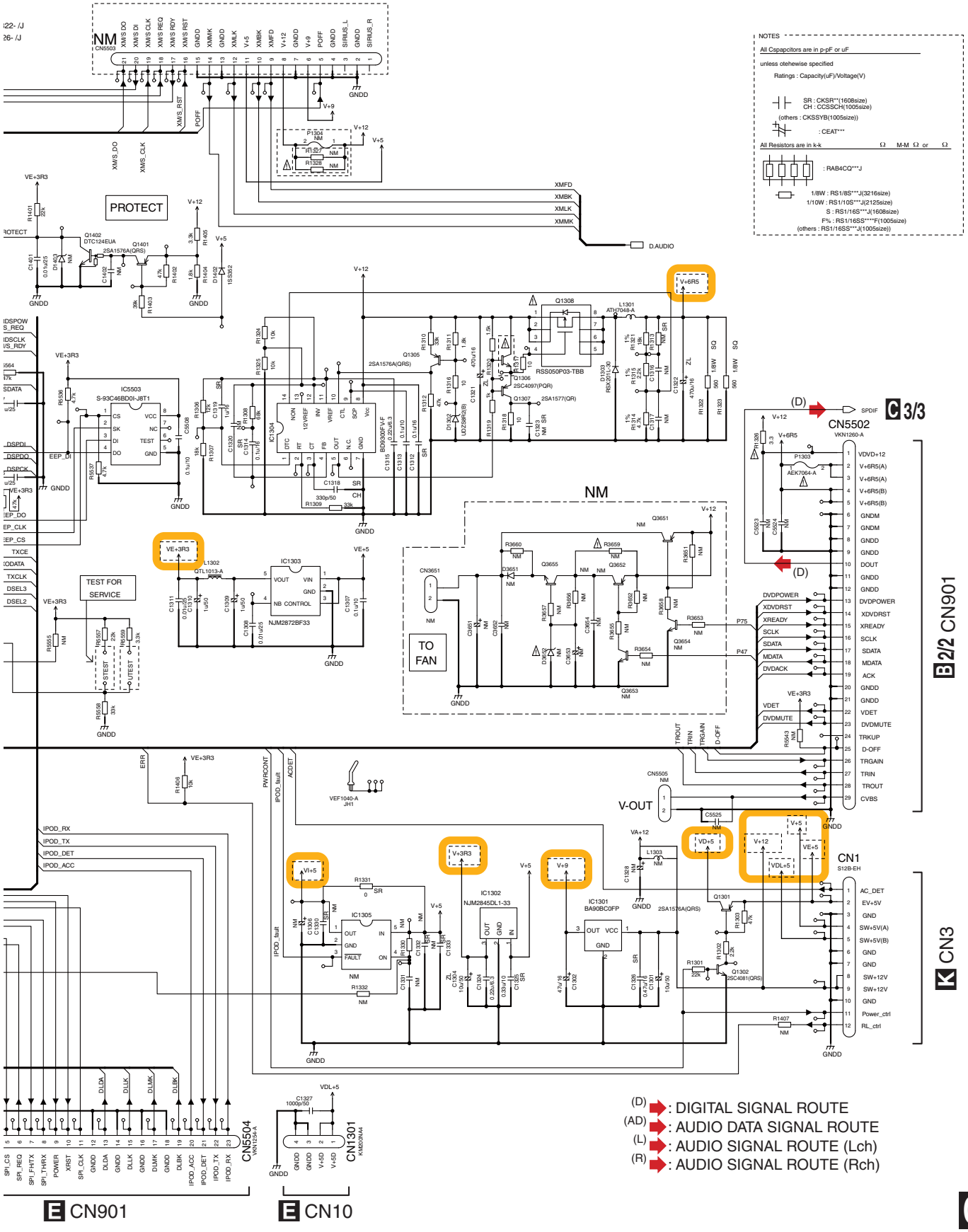
10.3 MAIN ASSY (1/3)

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491001. MFD, BY LITTELFUSE INK.P1303.

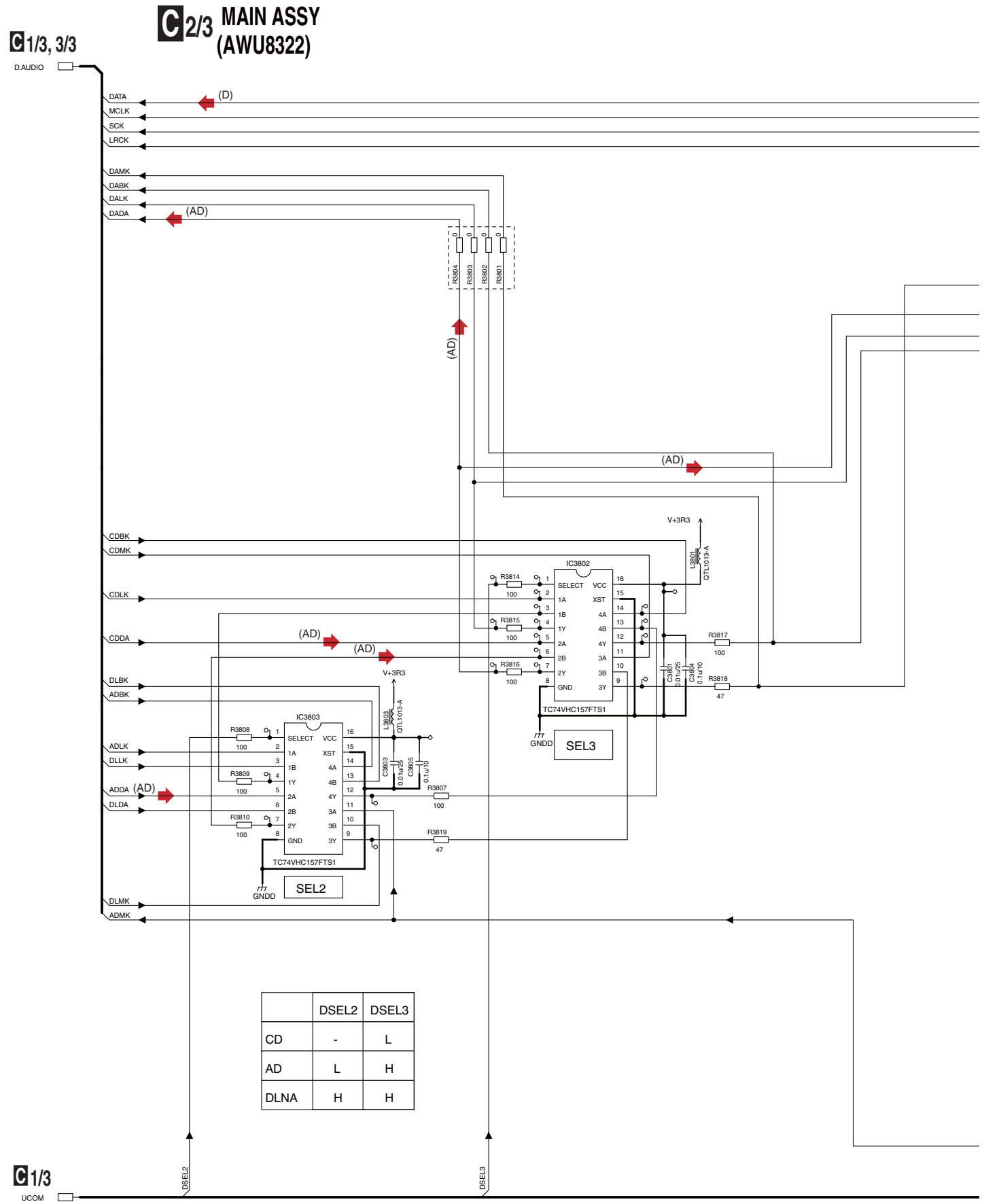
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.750 MFD, BY LITTELFUSE INK. FOR P1302.



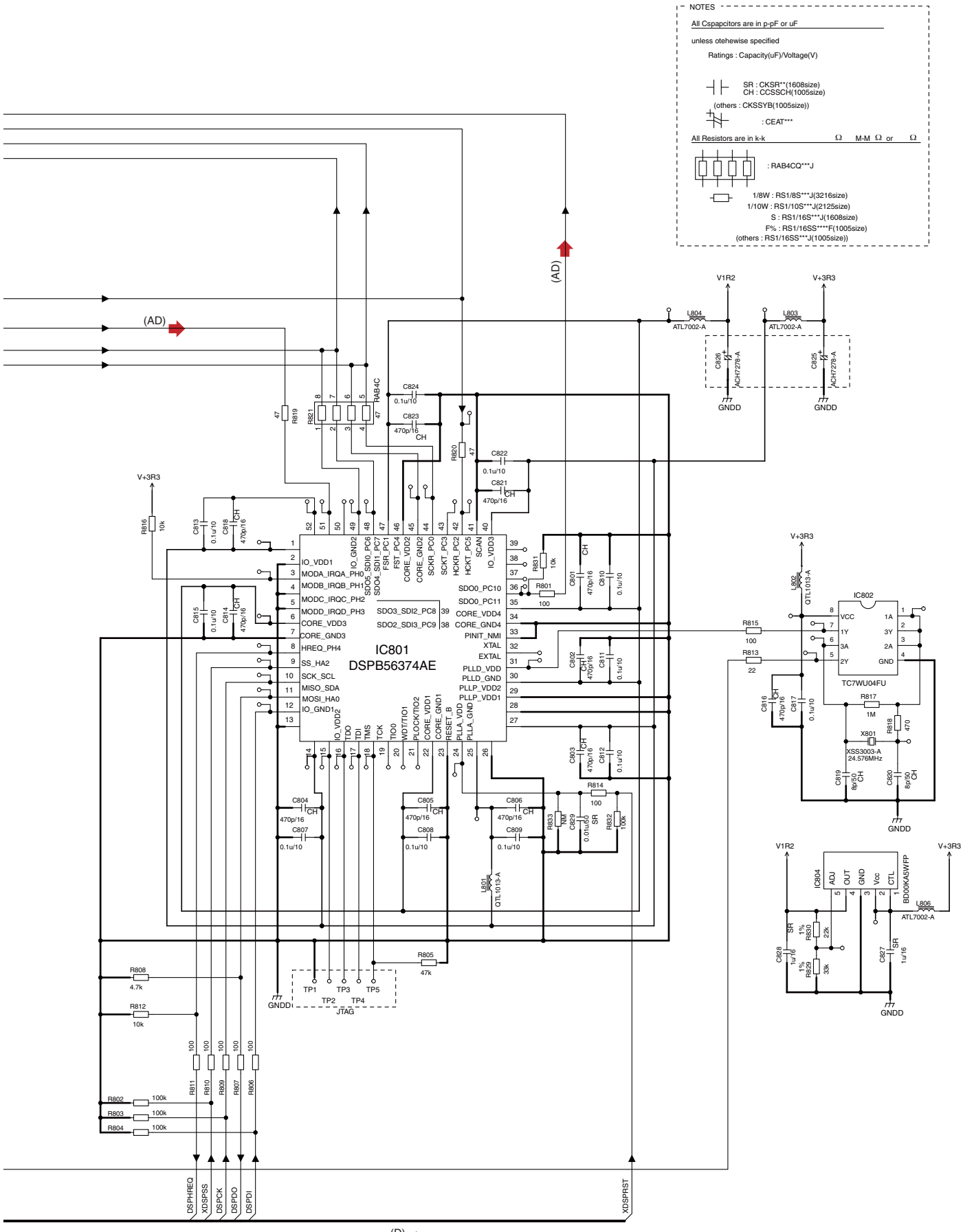
C 1/3 MAIN ASSY (AWU8322)



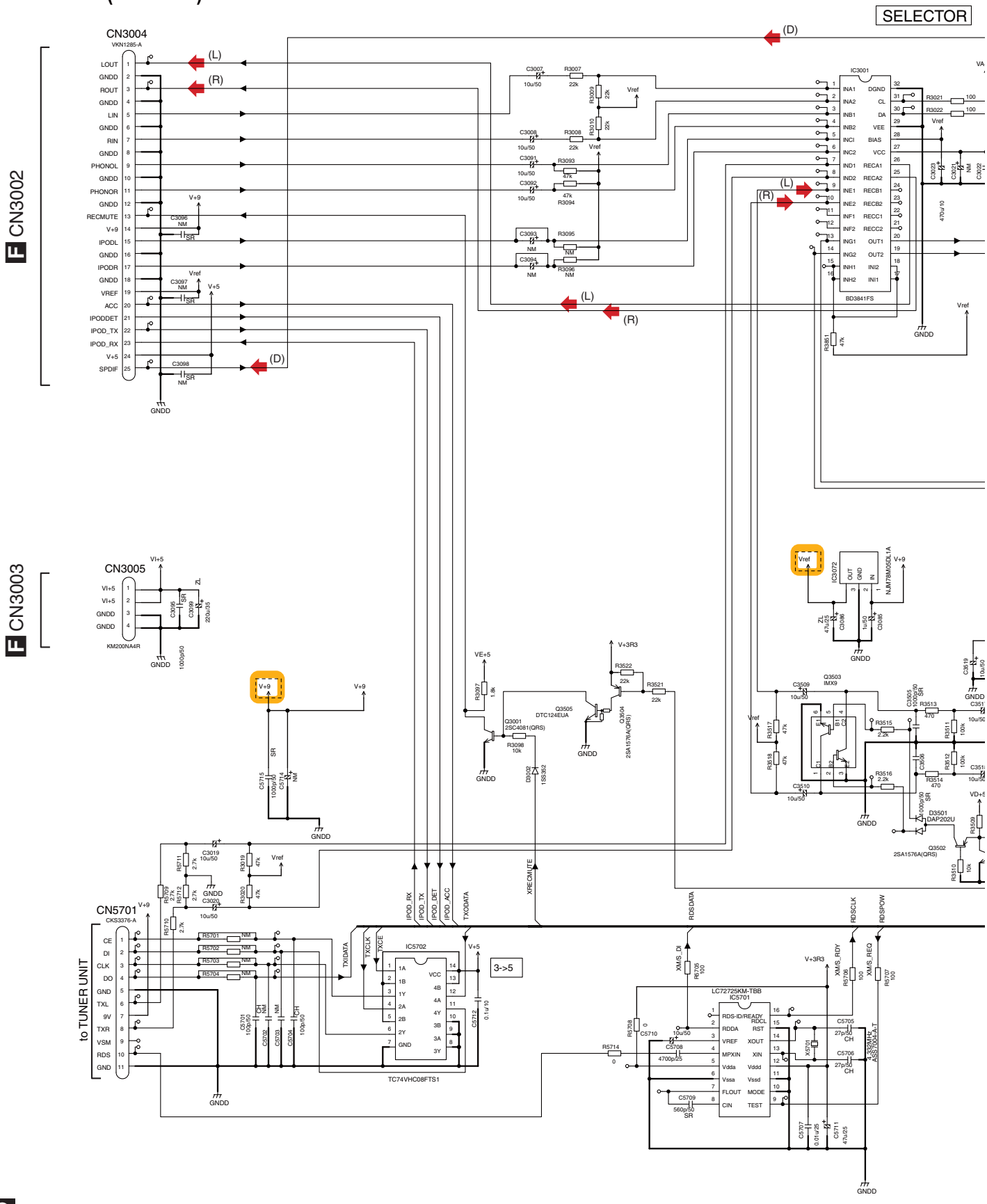
10.4 MAIN ASSY (2/3)



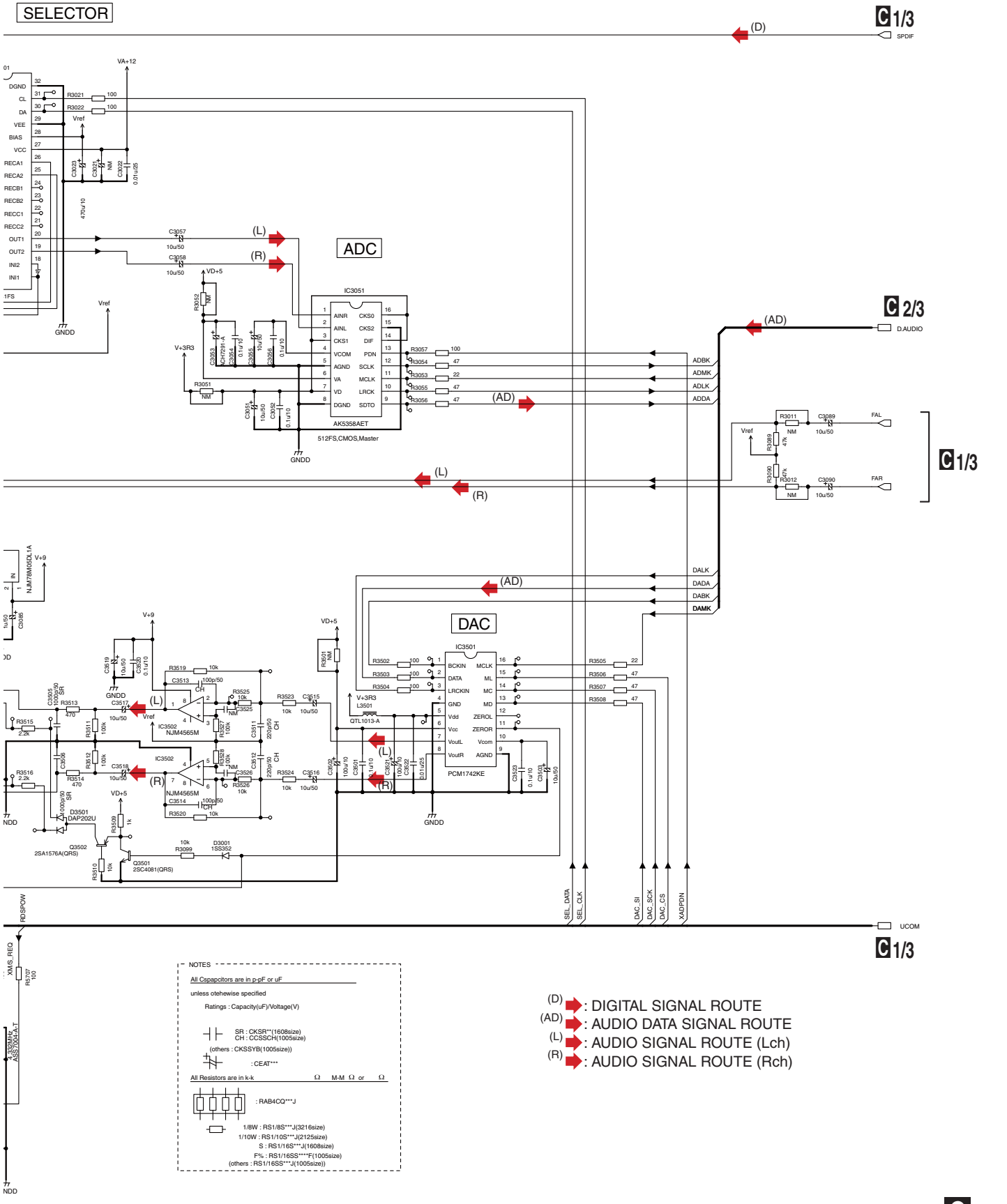
	DSEL2	DSEL3
CD	-	L
AD	L	H
DLNA	H	H


NOTES
All Cspacpitors are in p-pF or uF
unless otehewise specified
Ratings : Capacity(uF)/Voltage(V)
SR : CKSR**(1608size)
CH : CCSSCH(1005size)
(others : CKSSYB(1005size))
: CEAT***
All Resistors are in k-k Ω M-M Ω or Ω
: RAB4CQ***J
1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
S : RS1/16S***J(1608size)
F% : RS1/16SS****F(1005size)
(others : RS1/16SS***J(1005size))
IC801
DSPB56374AE
IC802
TC7WU04FU
IO_VDD1
MODA_IRQA_PH0
MODB_IRQB_PH1
MODC_IRQC_PH2
MODD_IRQD_PH3
CORE_VDD3
CORE_GND3
HREQ_PH4
SS_HA2
SCK_SCL
MISO_SDA
MOSI_HA0
IO_GND1
IO_VDD2
SDO3_SDI2_PC8
SDO2_SDI3_PC9
SDO0_PC10
SDO0_PC11
CORE_VDD4
CORE_GND4
PINIT_NMI
XTAL
EXTAL
PLLD_VDD
PLLD_GND
PLLP_VDD2
PLLP_VDD1
PLLA_VDD
PLLA_GND
RESET_B
CORE_GND1
CORE_VDD1
PLOCK/TIO2
WDT/TIO1
TIO0
TCK
TMS
TDI
TDO
IO_VDD2
IO_GND2
SDO5_SDI0_PC6
SDO4_SDI1_PC7
FSR_PC1
FST_PC4
CORE_VDD2
CORE_GND2
SCKR_PC0
SCKT_PC3
HCKR_PC2
HCKT_PC5
SCAN
IO_VDD3
V+3R3
V1R2
GNDD
(AD)
JTAG
TP1
TP2
TP3
TP4
TP5
DSPHREQ
XDSPSS
DSPCK
DSPDO
DSPDI
XDSPRST
(D) : DIGITAL SIGNAL ROUTE
(AD) : AUDIO DATA SIGNAL ROUTE

C3/3 MAIN ASSY (AWU8322)



SELECTOR



NOTES

All Cspacitors are in p-pF or uF

unless otehewise specified

Ratings : Capacity(uF)/Voltage(V)

SR : CKSR**(1608size)
CH : CCSSCH(1005size)
(others : CKSSYB(1005size))

: CEAT***

All Resistors are in k-k Ω M-M Ω or Ω

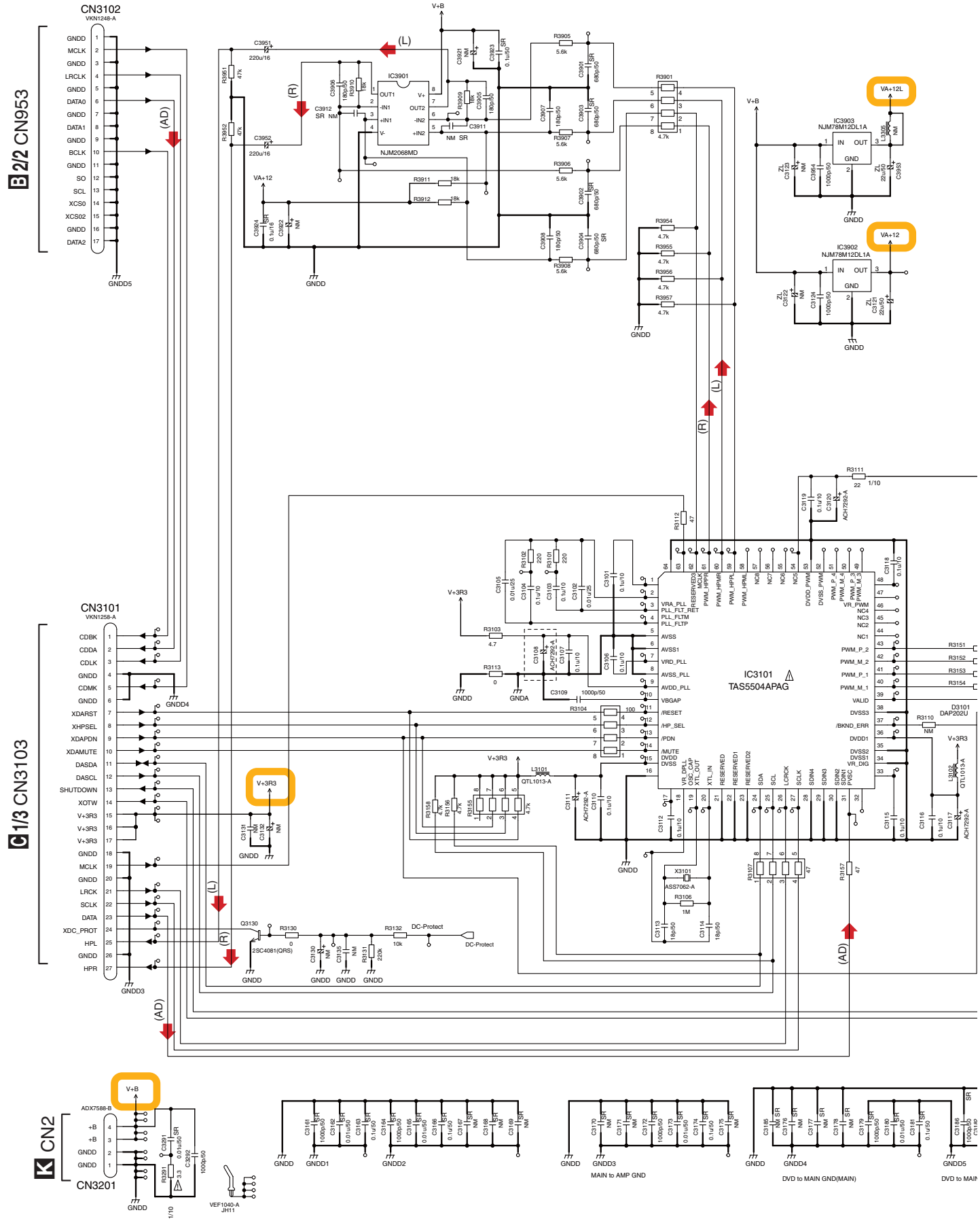
: RAB4CQ***J

1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
S : RS1/16S***J(1608size)
F% : RS1/16SS****F(1005size)
(others : RS1/16SS***J(1005size))

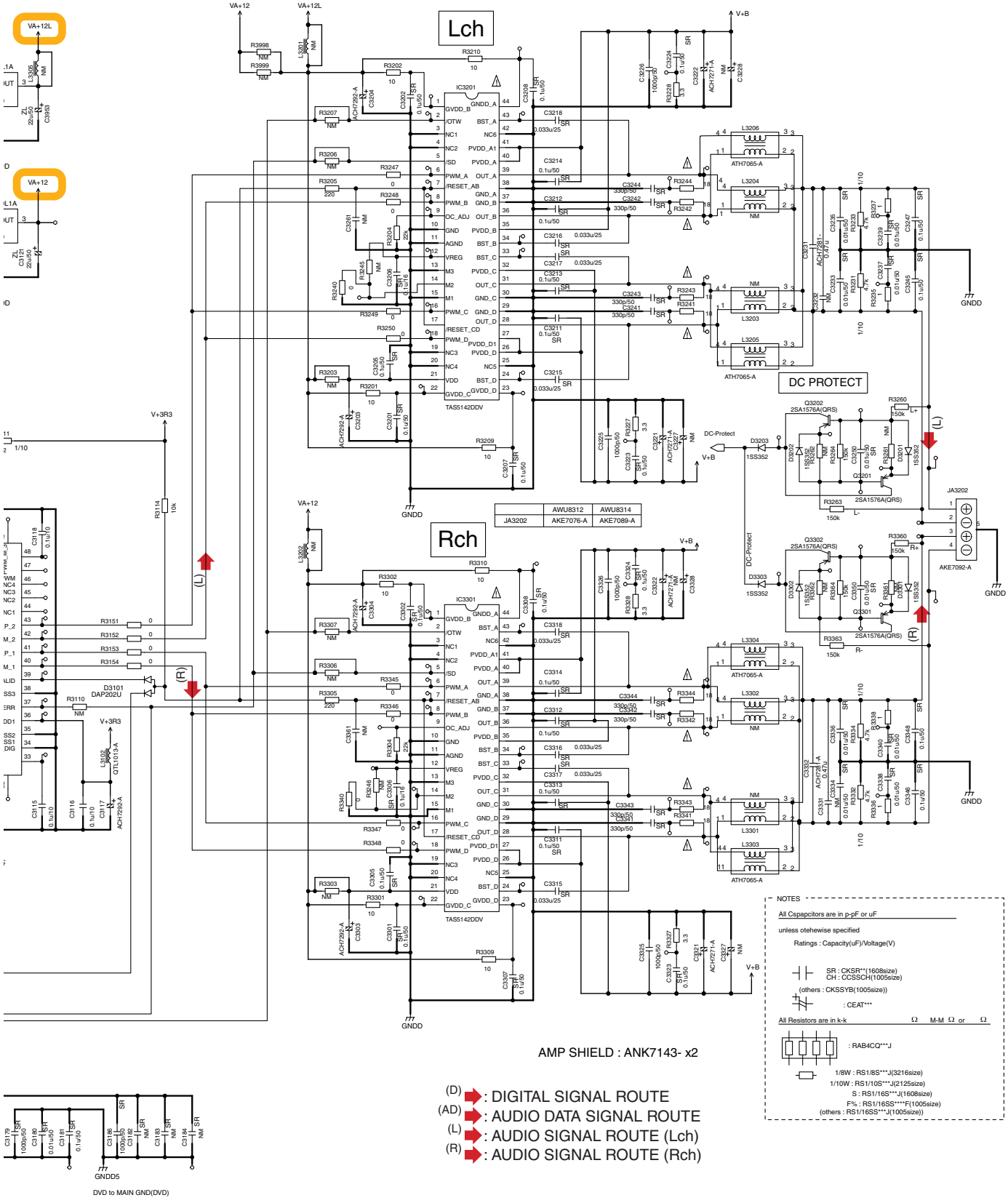
(D) : DIGITAL SIGNAL ROUTE
(AD) : AUDIO DATA SIGNAL ROUTE
(L) : AUDIO SIGNAL ROUTE (Lch)
(R) : AUDIO SIGNAL ROUTE (Rch)

C 3/3

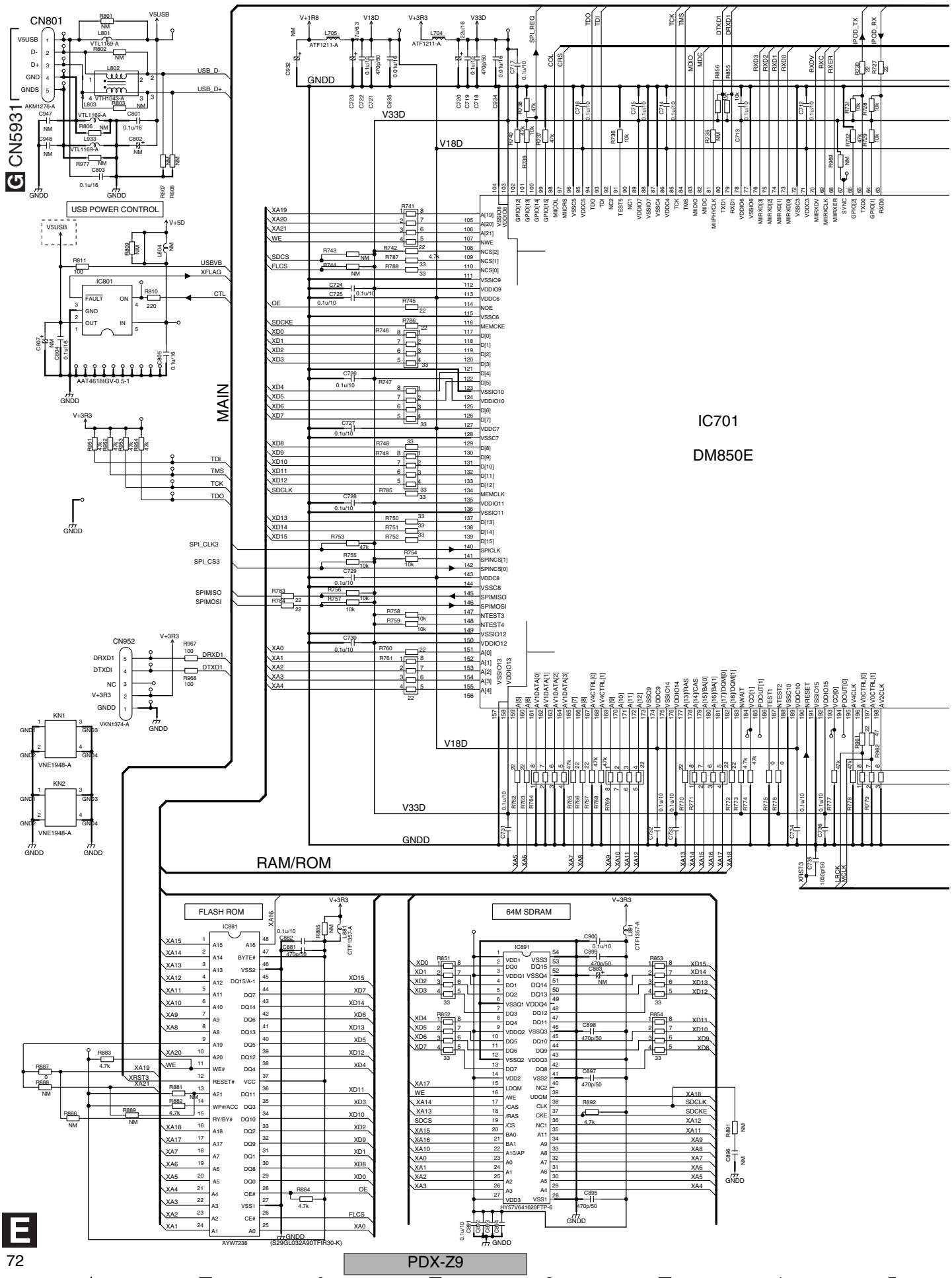
10.6 AMP ASSY

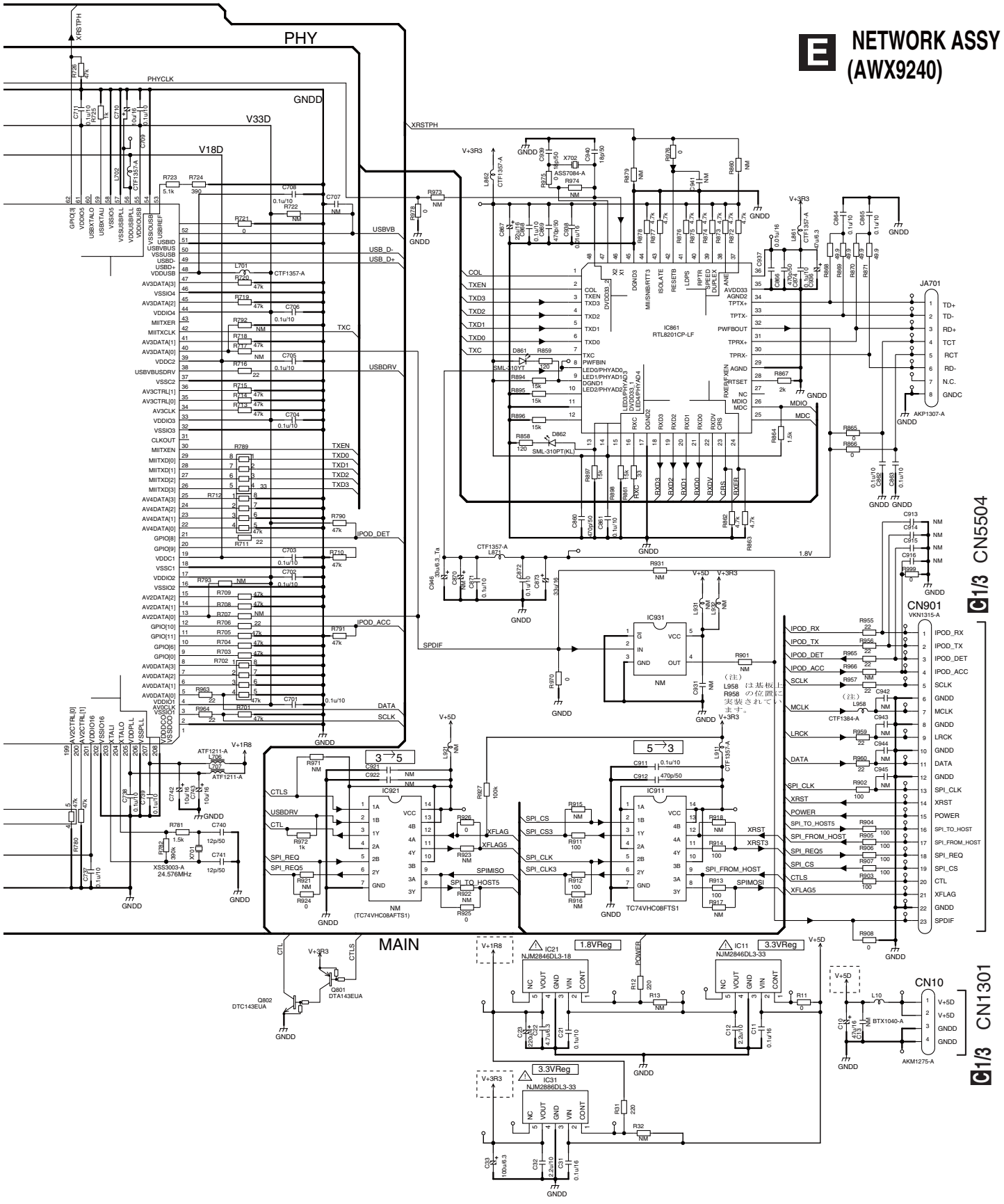

CN3102
VKN1248-A
GNDD
MCLK
GNDD
LRCLK
GNDD
DATA0
GNDD
DATA1
GNDD
BCLK
GNDD
SO
SCL
XCS0
XCS02
GNDD
DATA2
GNDD5
B 2/2 CN953
IC3901
NJM2068MD
OUT1
OUT2
-IN1
-IN2
+IN1
+IN2
V+
V-
VA+12
VA+12L
IC3903
NJM78M12DL1A
IC3902
NJM78M12DL1A
IN
OUT
GND
V+B
(L)
(R)
(AD)
GNDD
GNDD5
CN3101
VKN1258-A
C 1/3 CN3103
CDBK
CDDA
CDLK
GNDD
CDMK
GNDD
XDARST
XHPSEL
XDAPDN
XDAMUTE
DASDA
DASCL
SHUTDOWN
XOTW
V+3R3
V+3R3
V+3R3
GNDD
MCLK
GNDD
LRCK
SCLK
DATA
XDC_PROT
HPL
GNDD
HPR
GNDD3
GNDD4
IC3101
TAS5504APAG
V+3R3
GNDA
Q3130
2SC4081(QRS)
DC-Protect
X3101
ASS7062-A
D3101
DAP202U
K CN2
CN3201
ADX7588-B
+B
+B
GNDD
GNDD
VEF1040-A
JH11
GNDD
GNDD1
GNDD2
GNDD3
MAIN to AMP GND
GNDD
GNDD4
DVD to MAIN GND(MAIN)
GNDD5
DVD to MAI

D AMP ASSY (AWU8326)



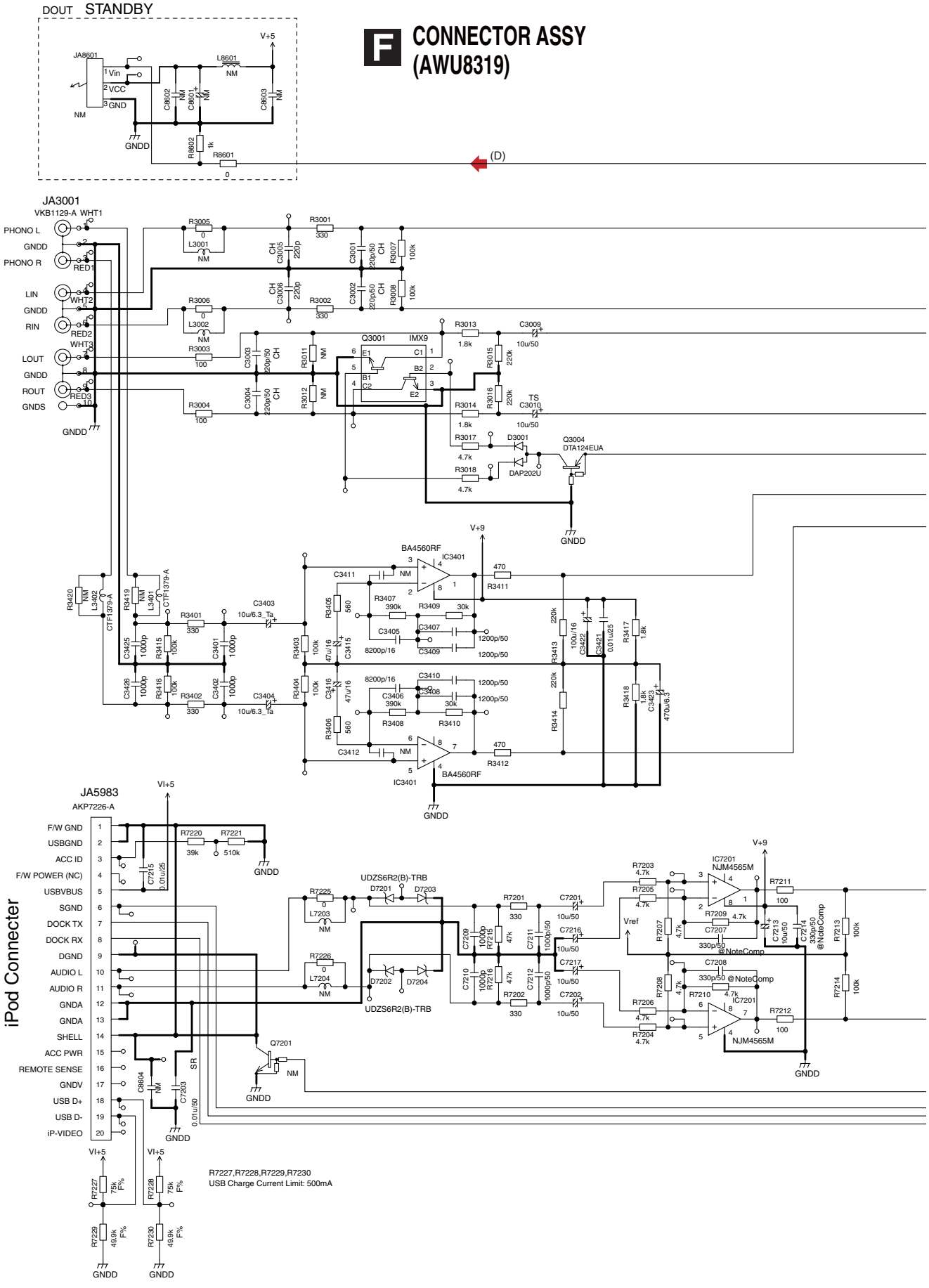
10.7 NETWORK ASSY

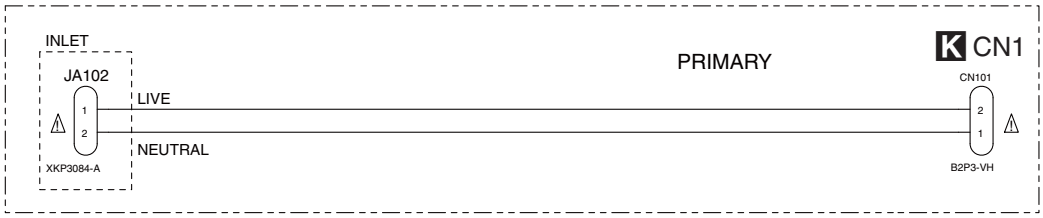


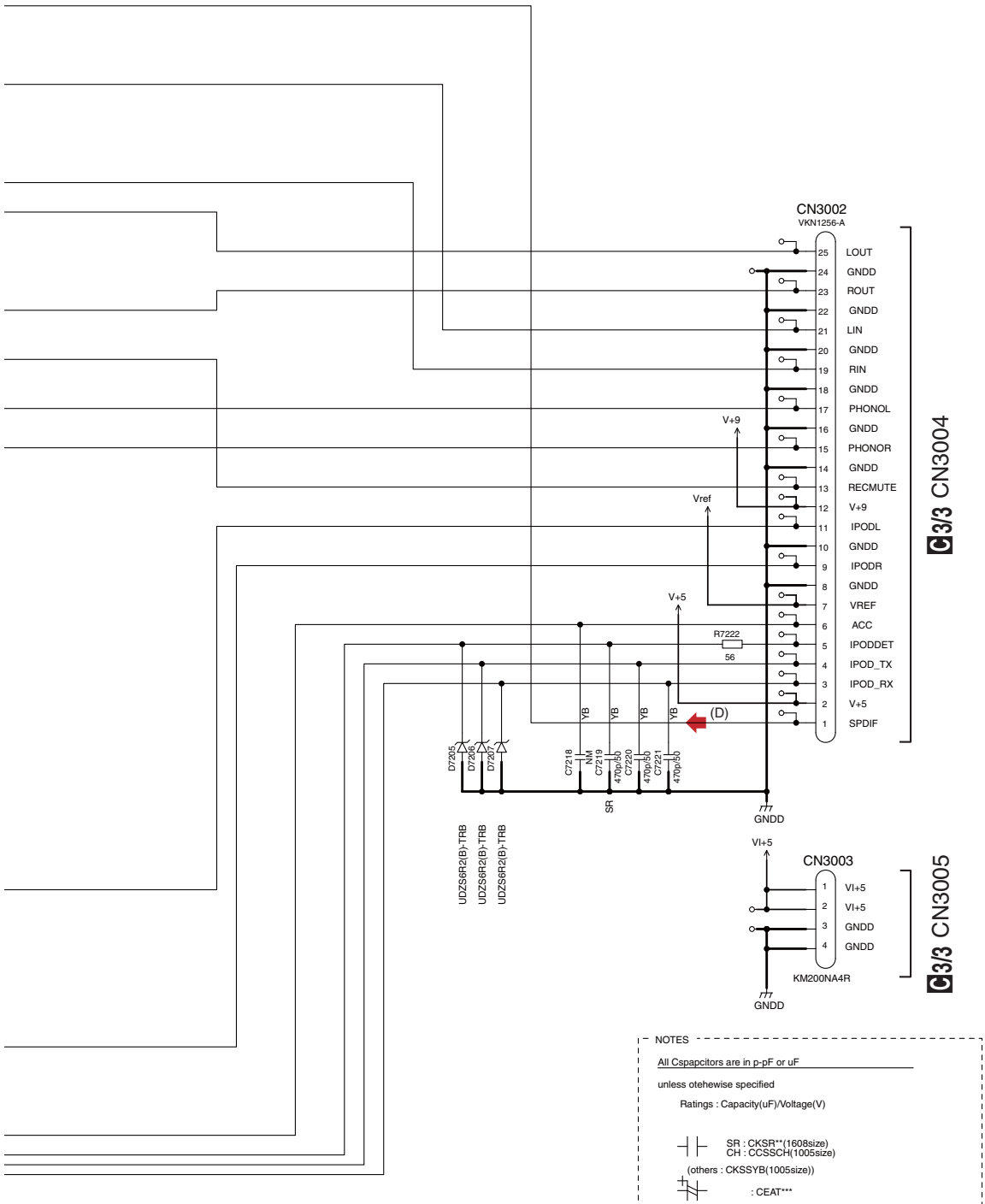

PHY
MAIN
XRSTPH
PHYCLK
GNDD
V33D
V18D
USBVB
USB_D-
USB_D+
TXC
USBDRV
TXEN
TXD0
TXD1
TXD2
TXD3
IPOD_DET
IPOD_ACC
SPDIF
DATA
SCLK
CTLS
SPI_REQ
SPI_REQ5
SPI_CS
SPI_CLK
SPIMISO
SPI_TO_HOST5
XFLAG
XFLAG5
XRST
XRST3
SPI_FROM_HOST
SPIMOSI
IC1861
RTL8201CP-LF
IC921
IC911
IC931
IC21
NJM2846DL3-18
1.8VReg
IC11
NJM2846DL3-33
3.3VReg
IC31
NJM2886DL3-33
JA701
AKP1307-A
CN901
VKN1315-A
CN10
BTX1040-A
AKM1275-A
CN5504
CN1301
1/3
XSS3003-A
24.576MHz
ATF1211-A
CTF1357-A
SML-310YT
SML-310PT(KL)
TC74VHC08FTS1
NM
(TC74VHC08AFTS1)
Q801
DTA143EUA
Q802
DTC143EUA
（注）L958 は基板上の位置に実装されています。
CTF1384-A

10.8 CONNECTOR ASSY

F CONNECTOR ASSY (AWU8319)







(D) ➡ : DIGITAL SIGNAL ROUTE

NOTES

All Cspapcitors are in p-pF or uF
unless otehewise specified

Ratings : Capacity(uF)/Voltage(V)

SR : CKSR**(1608size)
CH : CCSSCH(1005size)
(others : CKSSYB(1005size))

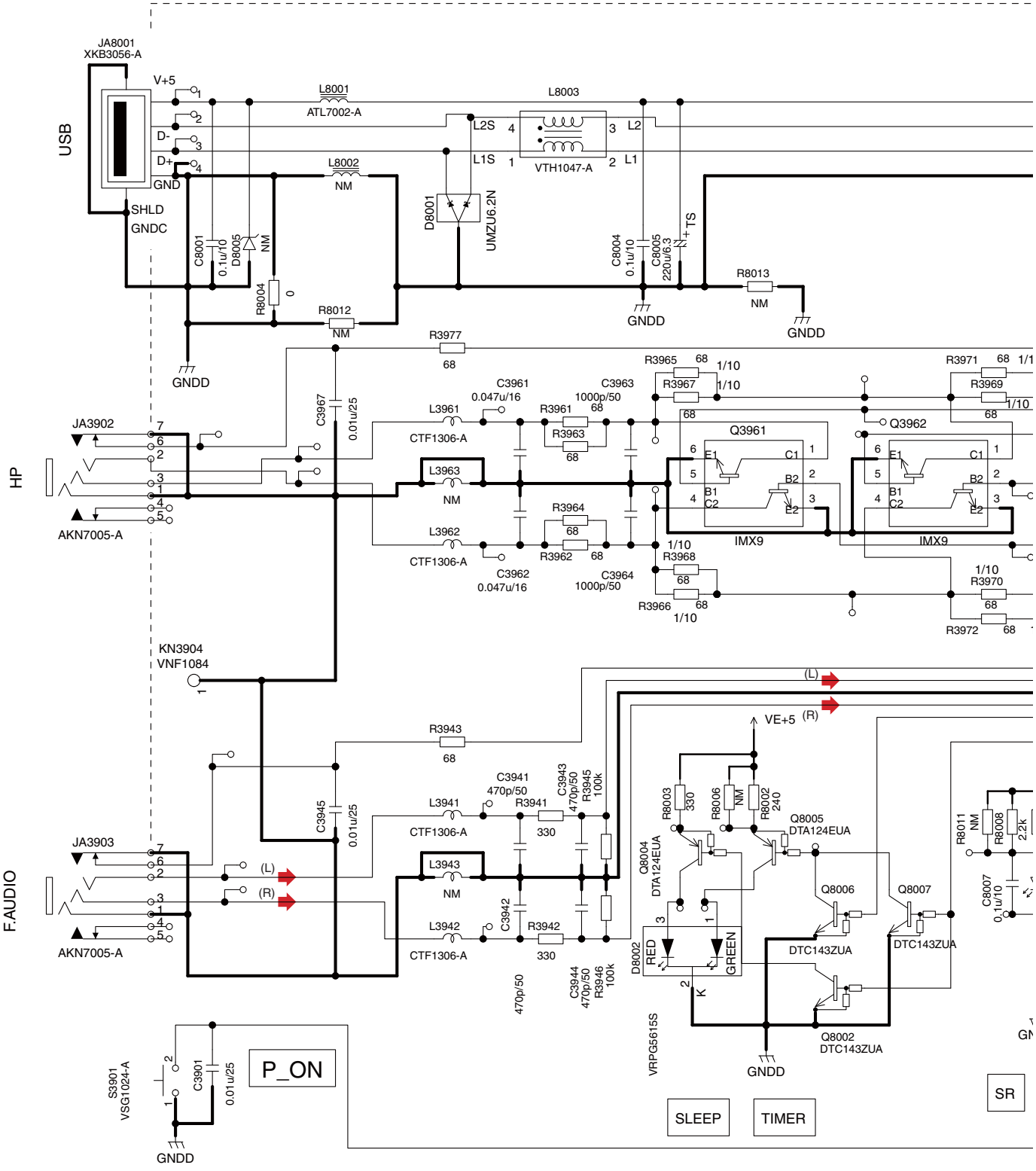
: CEAT***

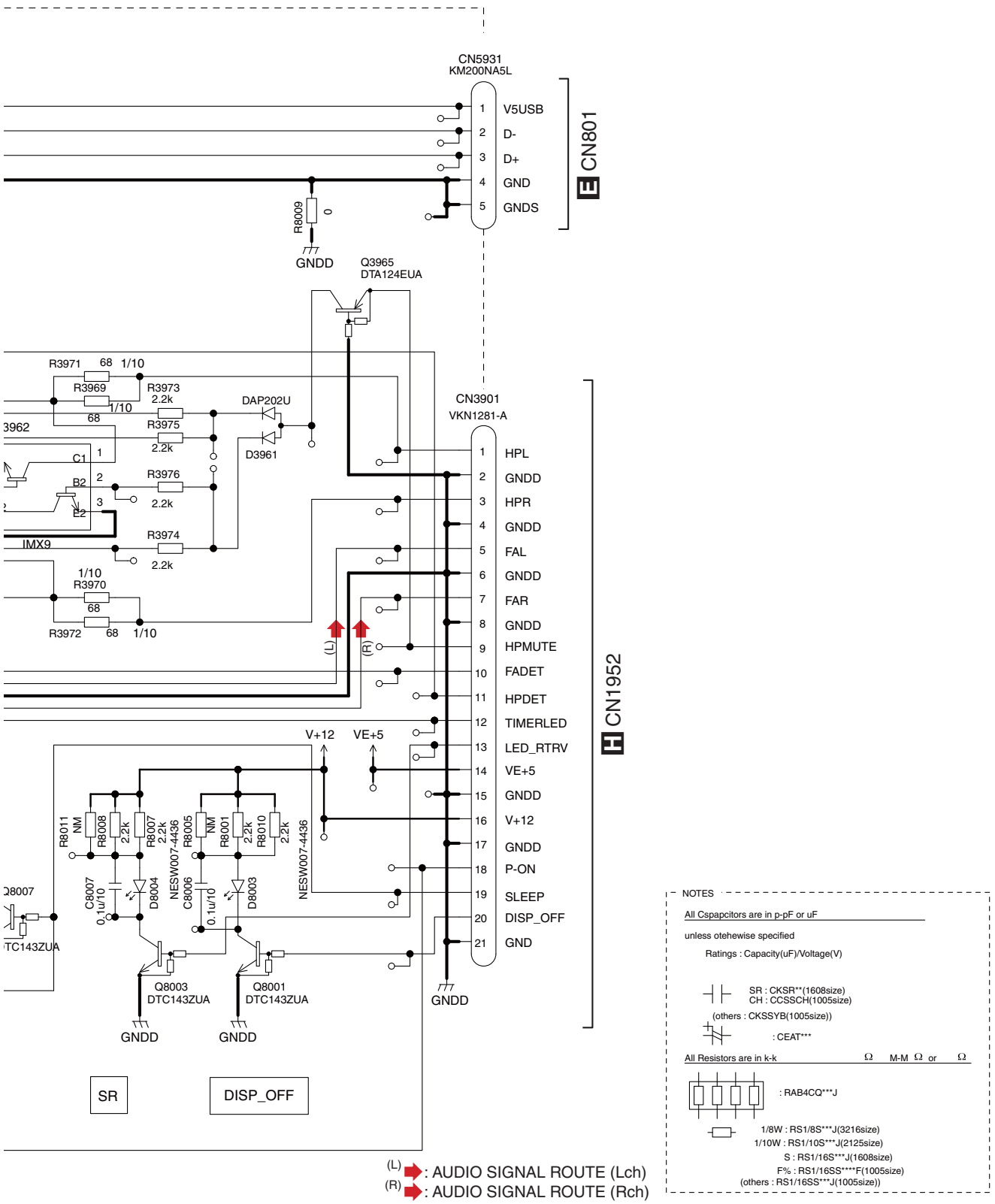
All Resistors are in k-k Ω M-M Ω or Ω

: RAB4CQ***J

1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
S : RS1/16S***J(1608size)
F% : RS1/16SS****F(1005size)
(others : RS1/16SS***J(1005size))

G FRONT ASSY (AWU8321)





(L) : AUDIO SIGNAL ROUTE (Lch)
(R) : AUDIO SIGNAL ROUTE (Rch)

NOTES

All Cspapcitors are in p-pF or uF

unless otehewise specified

Ratings : Capacity(uF)/Voltage(V)

SR : CKSR**(1608size)
CH : CCSSCH(1005size)
(others : CKSSYB(1005size))

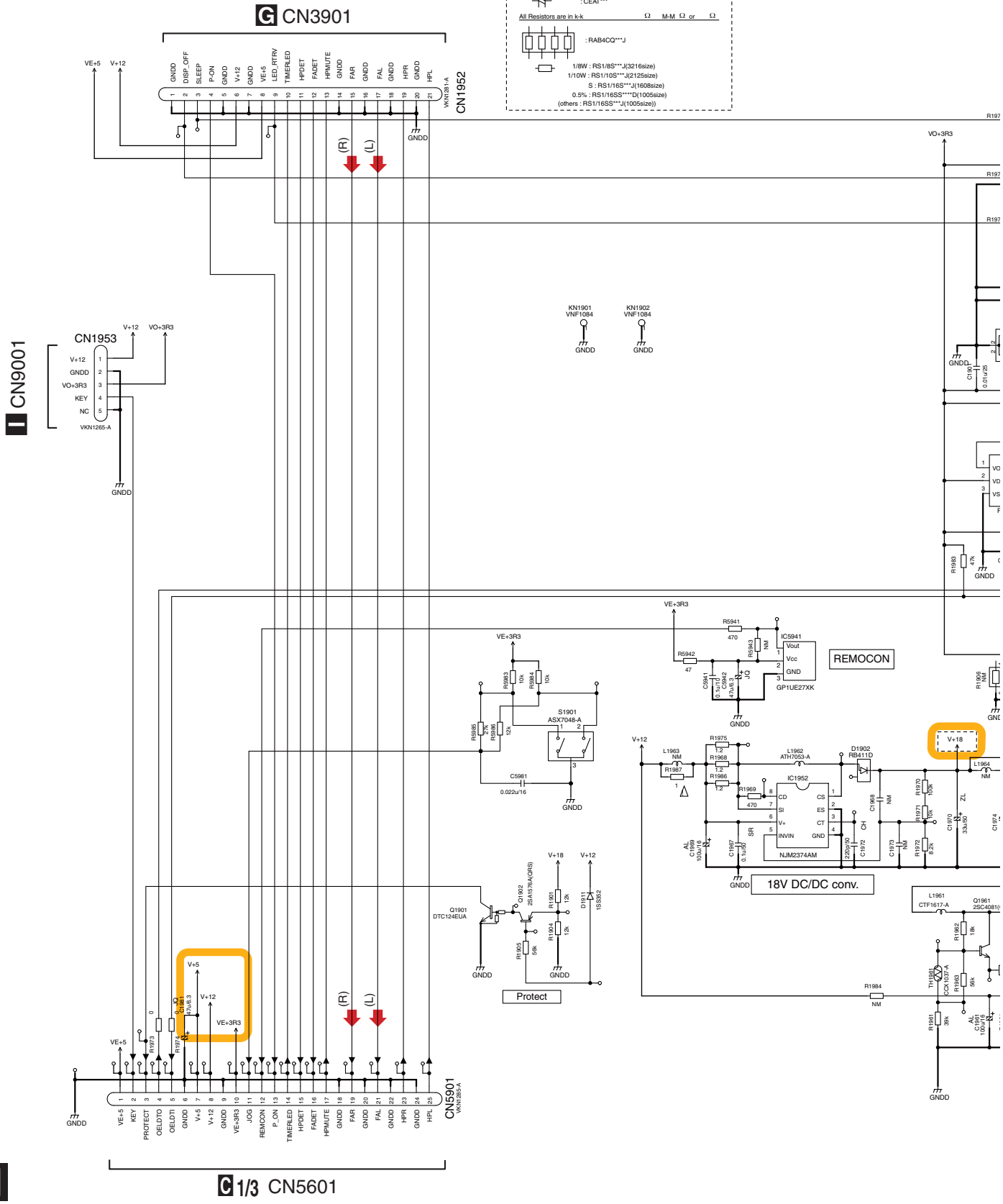
: CEAT***

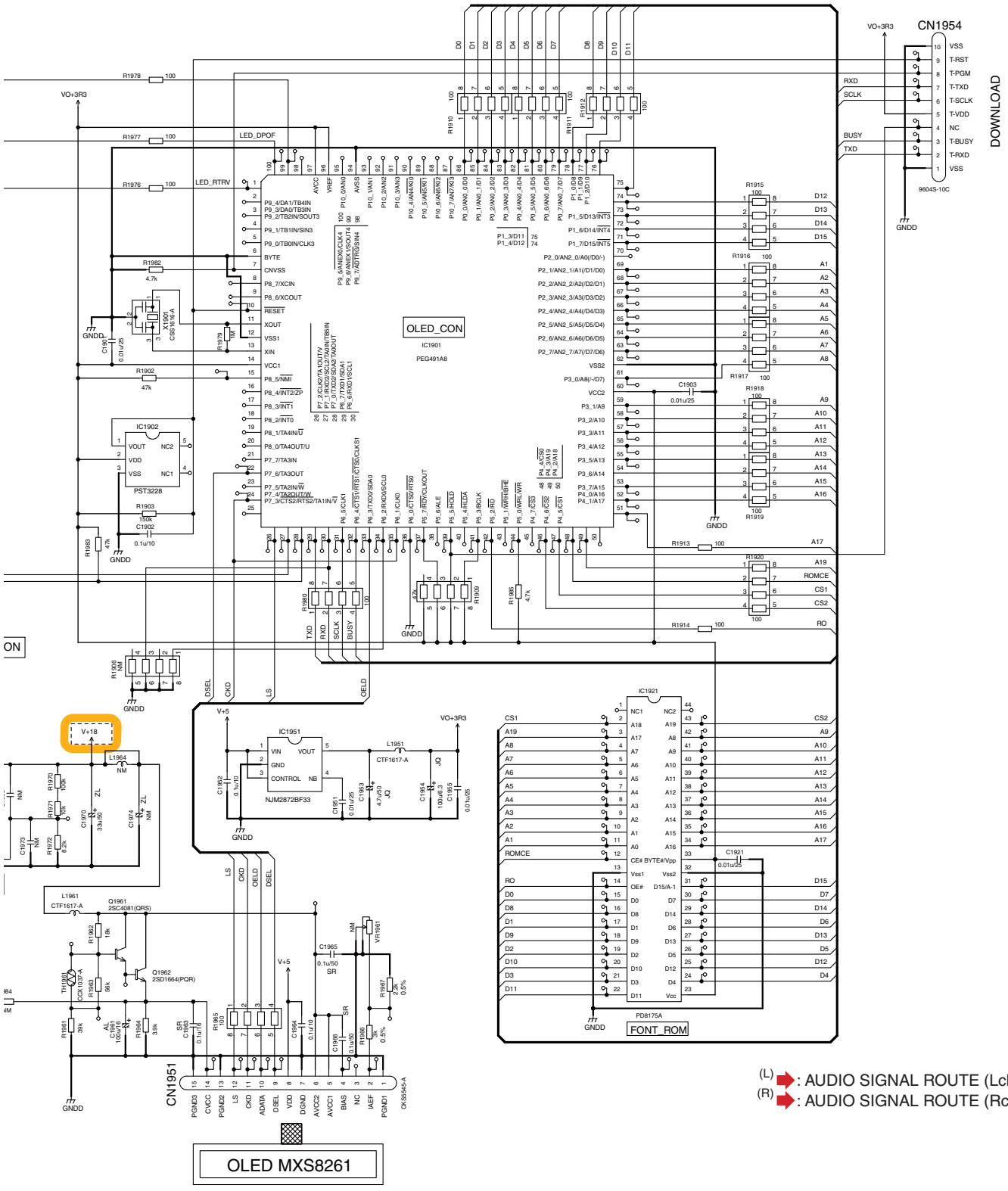
All Resistors are in k-k Ω M-M Ω or Ω

: RAB4CQ***J

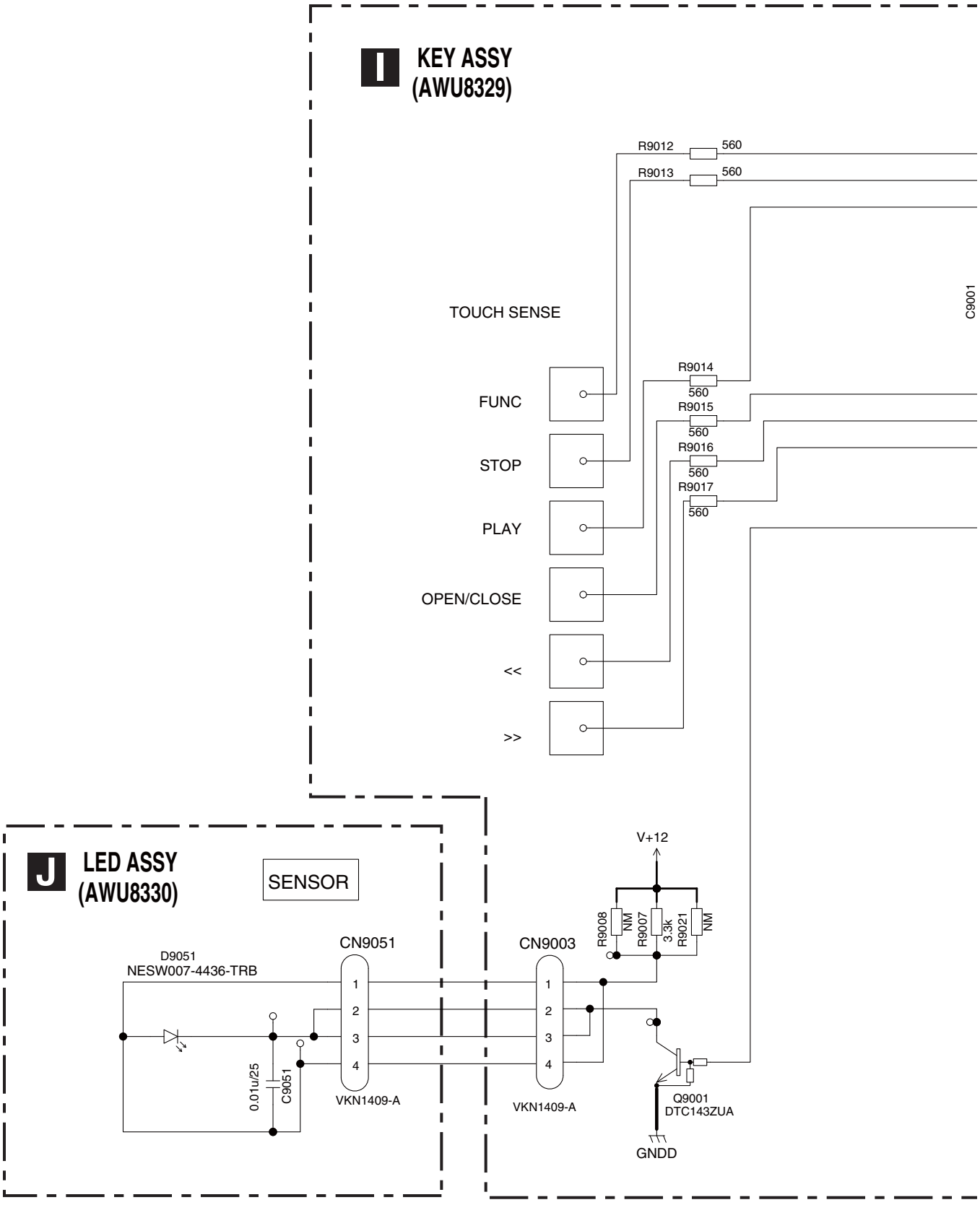
1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
S : RS1/16S***J(1608size)
F% : RS1/16SS****F(1005size)
(others : RS1/16SS***J(1005size))

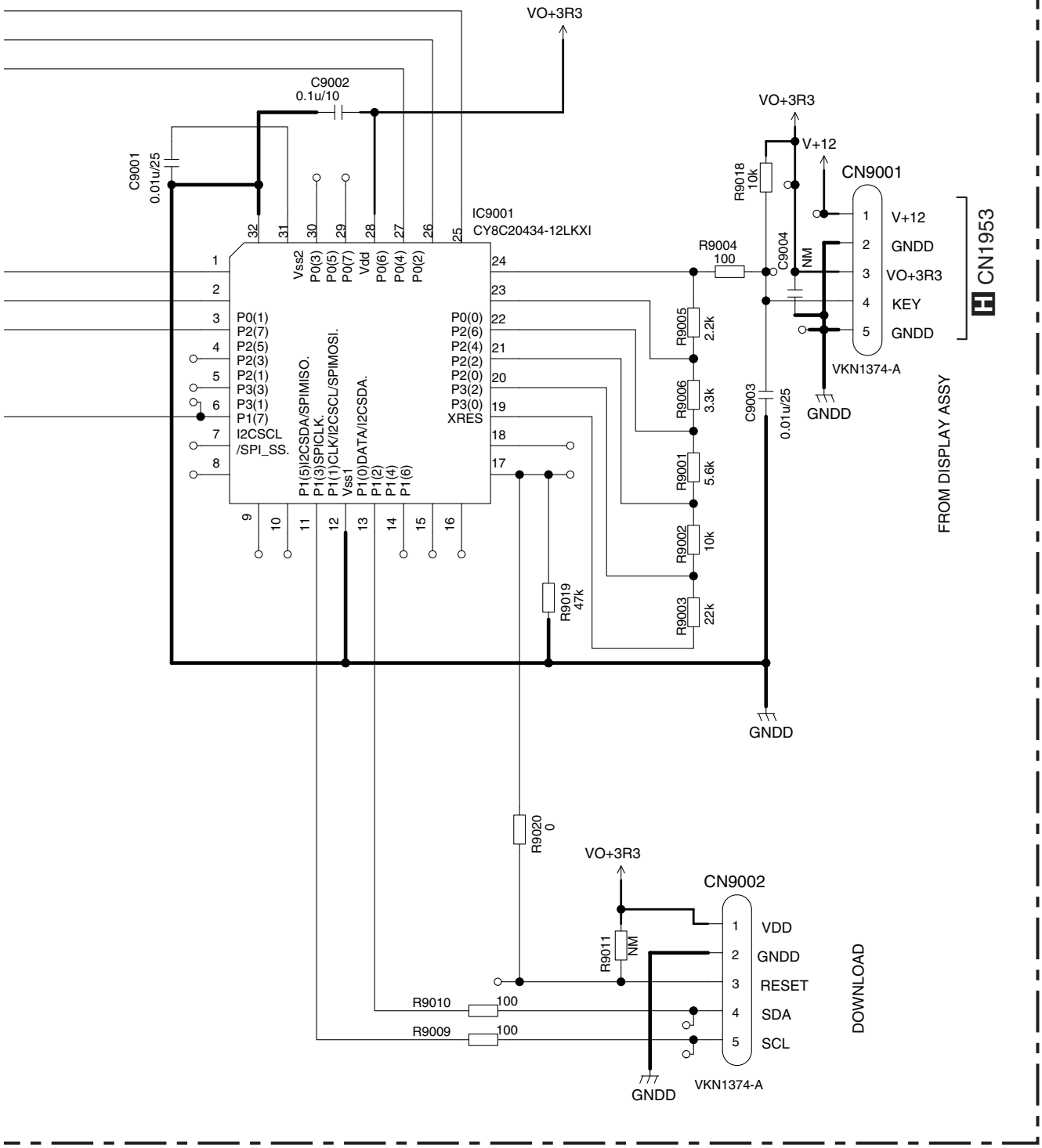
H DISPLAY ASSY (AWU8328)



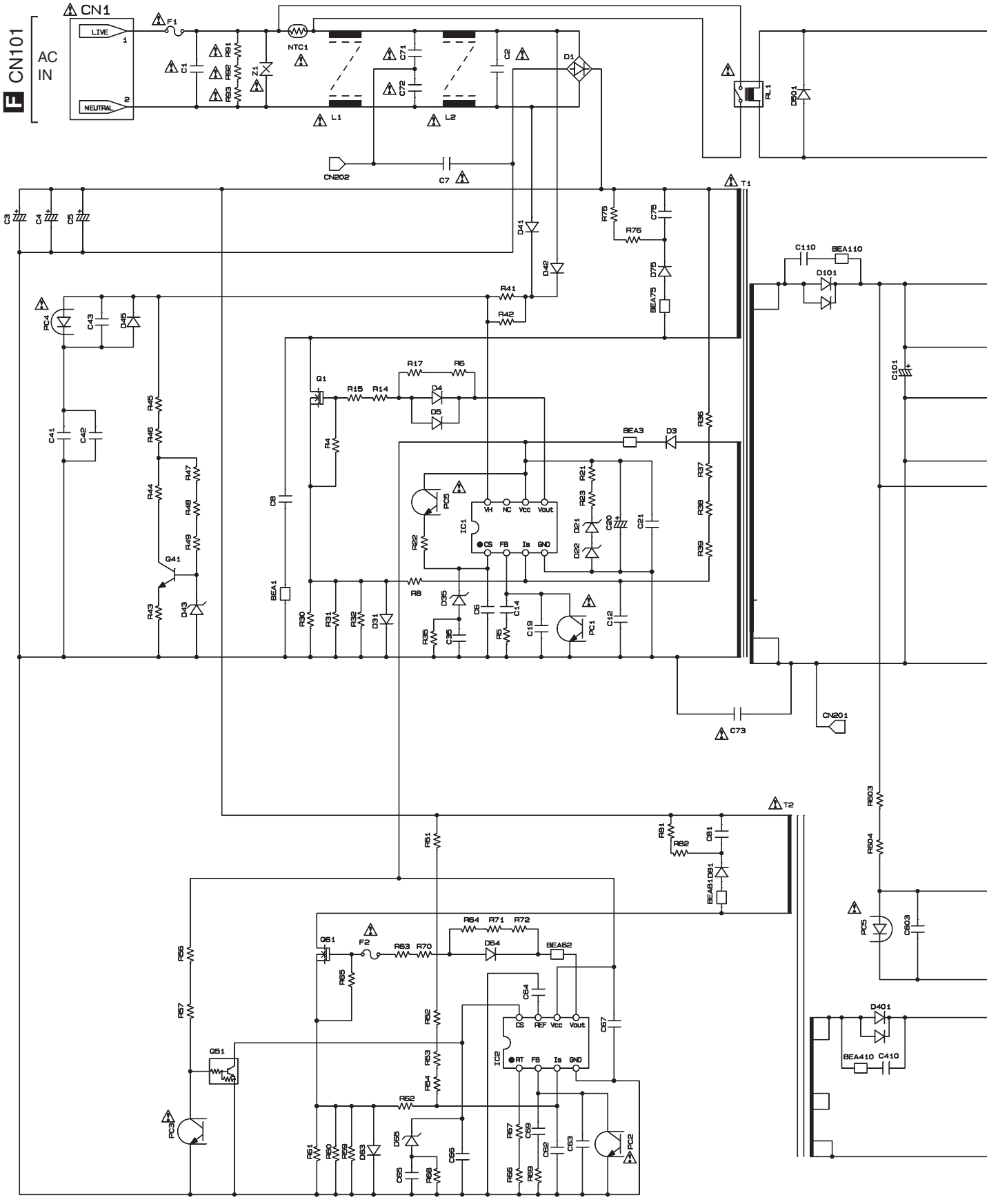

OLED_CON
IC1901
PEG491A8
IC1902
PST3228
IC1921
PD8175A
FONT_ROM
IC1951
NJM2872BF33
CN1954
9604S-10C
DOWNLOAD
CN1951
OLED MXS8261
VO+3R3
V+5
V+18
GNDD
LED_DPOF
LED_RTRV
RXD
SCLK
BUSY
TXD
(L) : AUDIO SIGNAL ROUTE (Lch)
(R) : AUDIO SIGNAL ROUTE (Rch)

10.11 KEY AND LED ASSYS



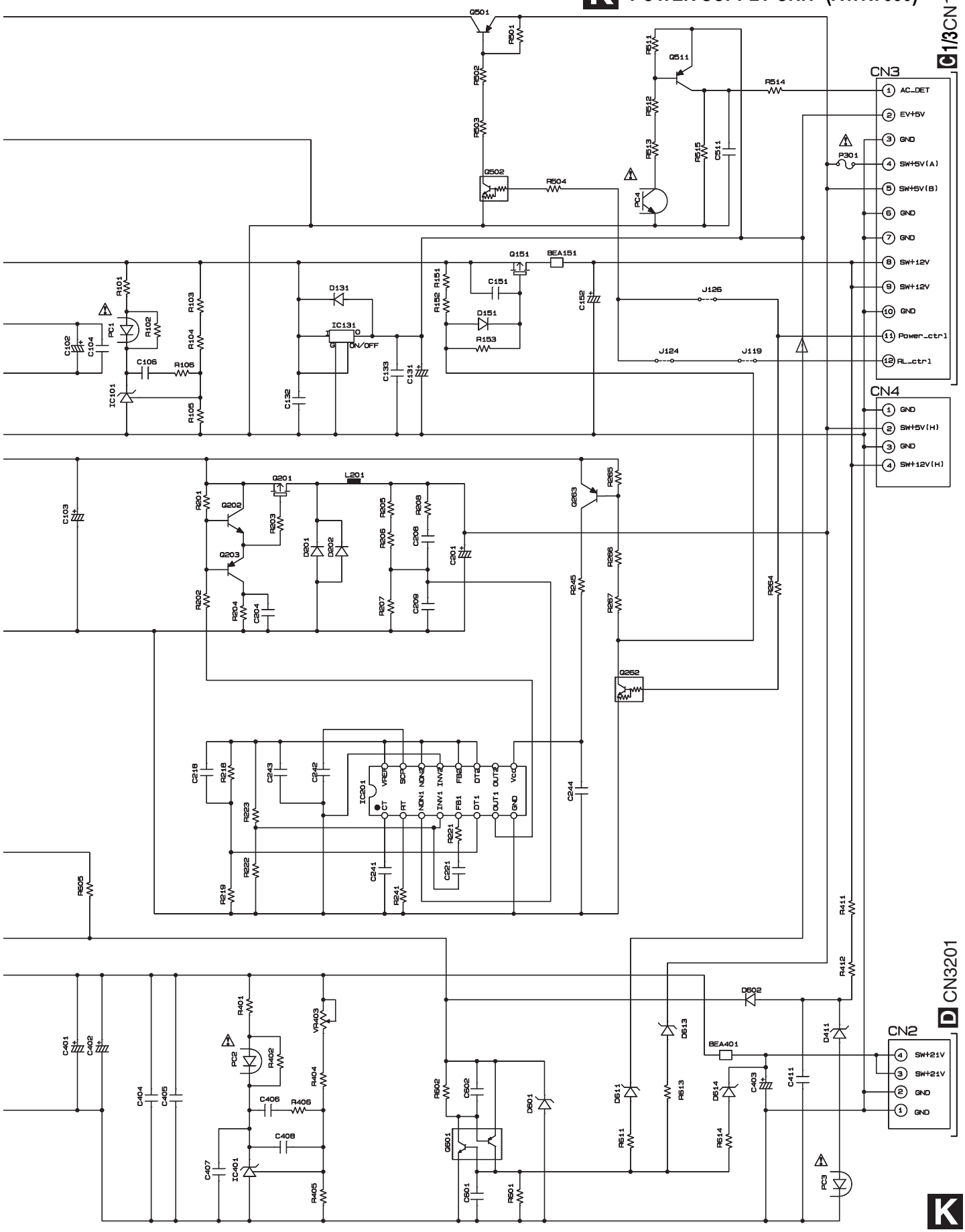

VO+3R3
C9002
0.1u/10
C9001
0.01u/25
IC9001
CY8C20434-12LKXI
Vss2
P0(3)
P0(5)
P0(7)
Vdd
P0(6)
P0(4)
P0(2)
P0(1)
P2(7)
P2(5)
P2(3)
P2(1)
P3(3)
P3(1)
P1(7)
I2CSCL
/SPI_SS.
P1(5)I2CSDA/SPIMISO.
P1(3)SPICLK.
P1(1)CLK/I2CSCL/SPIMOSI.
Vss1
P1(0)DATA/I2CSDA.
P1(2)
P1(4)
P1(6)
P0(0)
P2(6)
P2(4)
P2(2)
P2(0)
P3(2)
P3(0)
XRES
R9004
100
R9005
2.2k
R9006
3.3k
R9001
5.6k
R9002
10k
R9003
22k
R9019
47k
R9018
10k
C9004
NM
C9003
0.01u/25
GNDD
V+12
CN9001
1 V+12
2 GNDD
3 VO+3R3
4 KEY
5 GNDD
VKN1374-A
CN1953
FROM DISPLAY ASSY
R9020
0
CN9002
1 VDD
2 GNDD
3 RESET
4 SDA
5 SCL
R9011
NM
R9010
100
R9009
100
VKN1374-A
DOWNLOAD

10.12 POWER SUPPLY UNIT



MPN5902

K POWER SUPPLY UNIT (AWR7050)



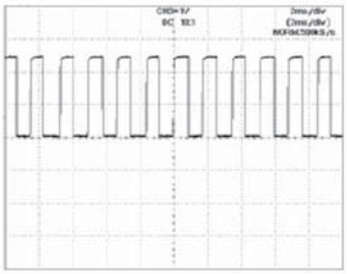
10.13 WAVEFORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

B DVDM ASSY

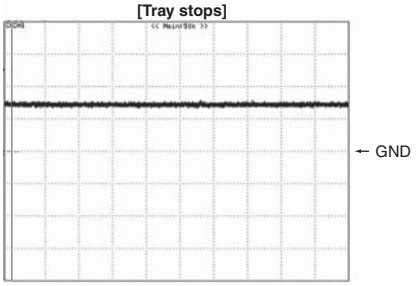
Measurement condition ; No. 1 to 10 : reference A1 (DVD), T2-chp 19, Color-bar
No. 11 to 14 : reference A1 (DVD), T1

1 **IC201-pin 47 [FG]**
V: 1V/div. H: 2msec/div.

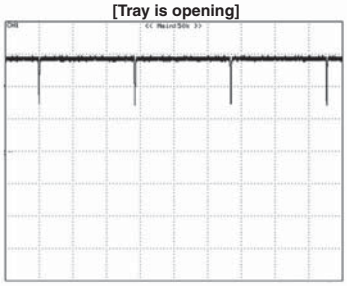


2 **IC201-pin 39 [TROPENPWM]**
V: 1V/div. H: 5µsec/div.

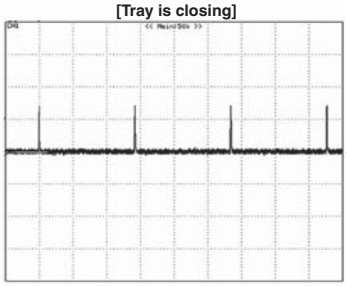
[Tray stops]



[Tray is opening]

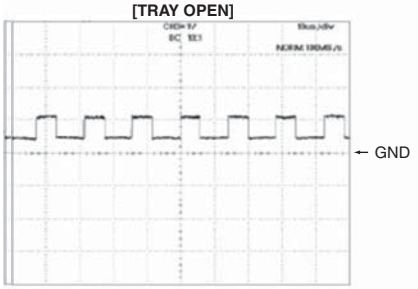


[Tray is closing]

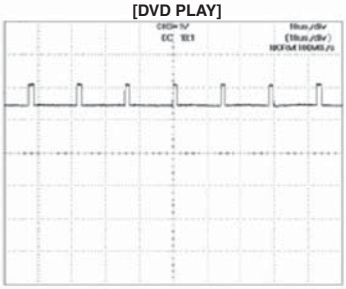


3 **IC201-pin 37 [DMSO]**

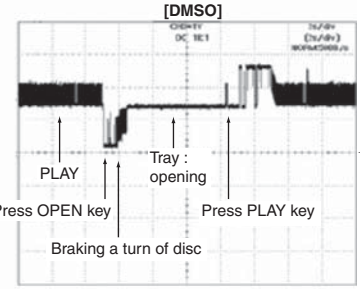
V: 1V/div. H: 10µsec/div.
[TRAY OPEN]



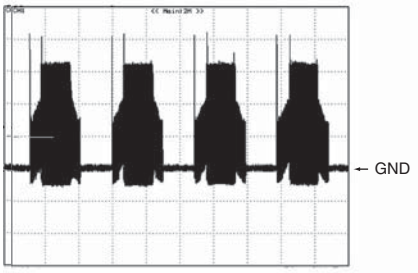
V: 1V/div. H: 10µsec/div.
[DVD PLAY]



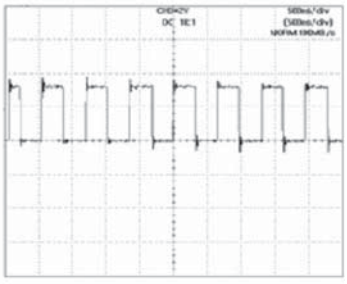
V: 1V/div. H: 2sec/div.
[DMSO]



4 **CN102-pin 2, 3, 4 (IC101-pin 30, 33, 35) [SPINDLE (WVU)]**
V: 2V/div. H: 2msec/div.



5 **IC201-pin 225 [ASPDIF AUDIO DIGITAL SIGNAL]**
V: 2V/div. H: 500nsec/div.



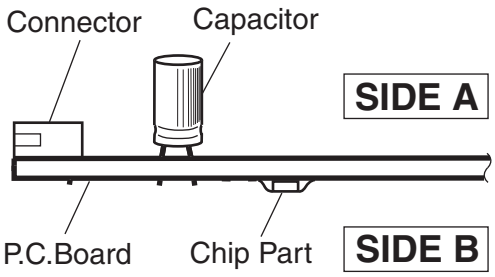
11. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

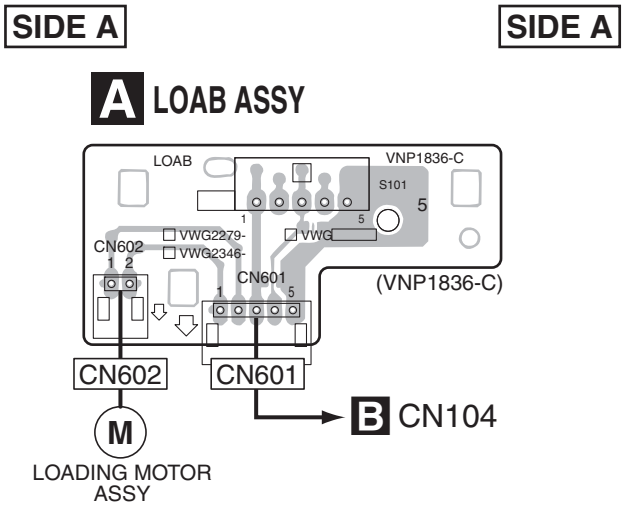
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

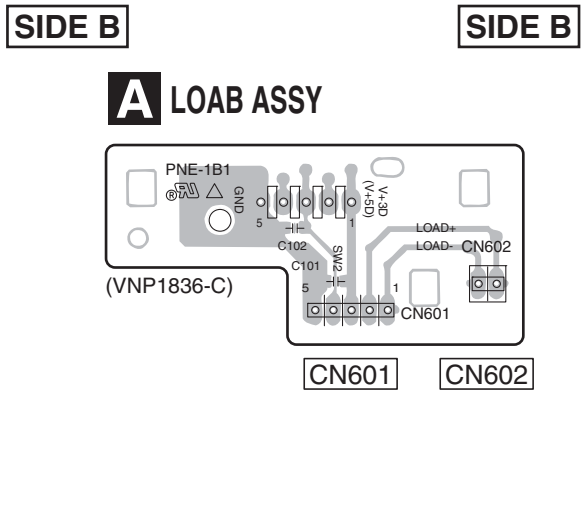
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



11.1 LOAB ASSY

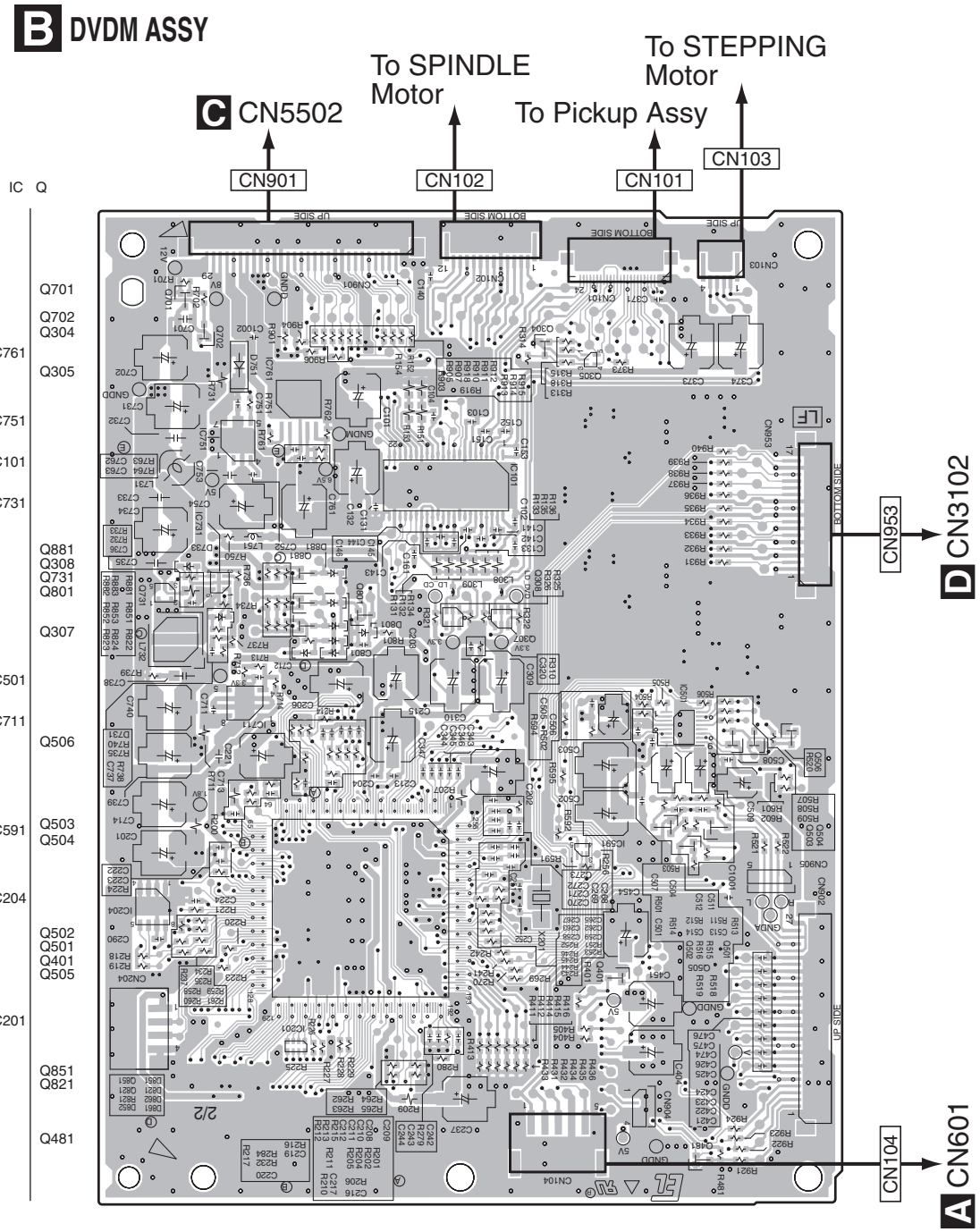




11.2 DVDM ASSY

SIDE A

SIDE A



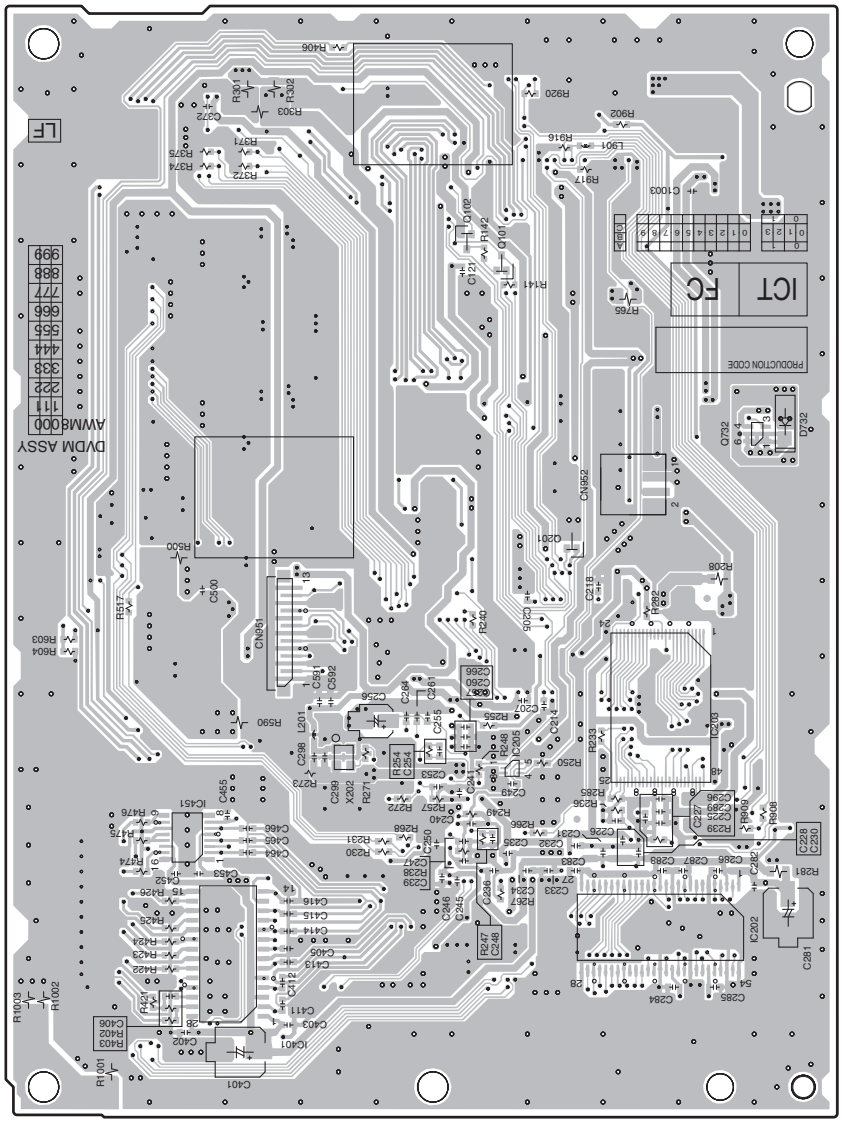
SIDE B

SIDE B

B DVDM ASSY

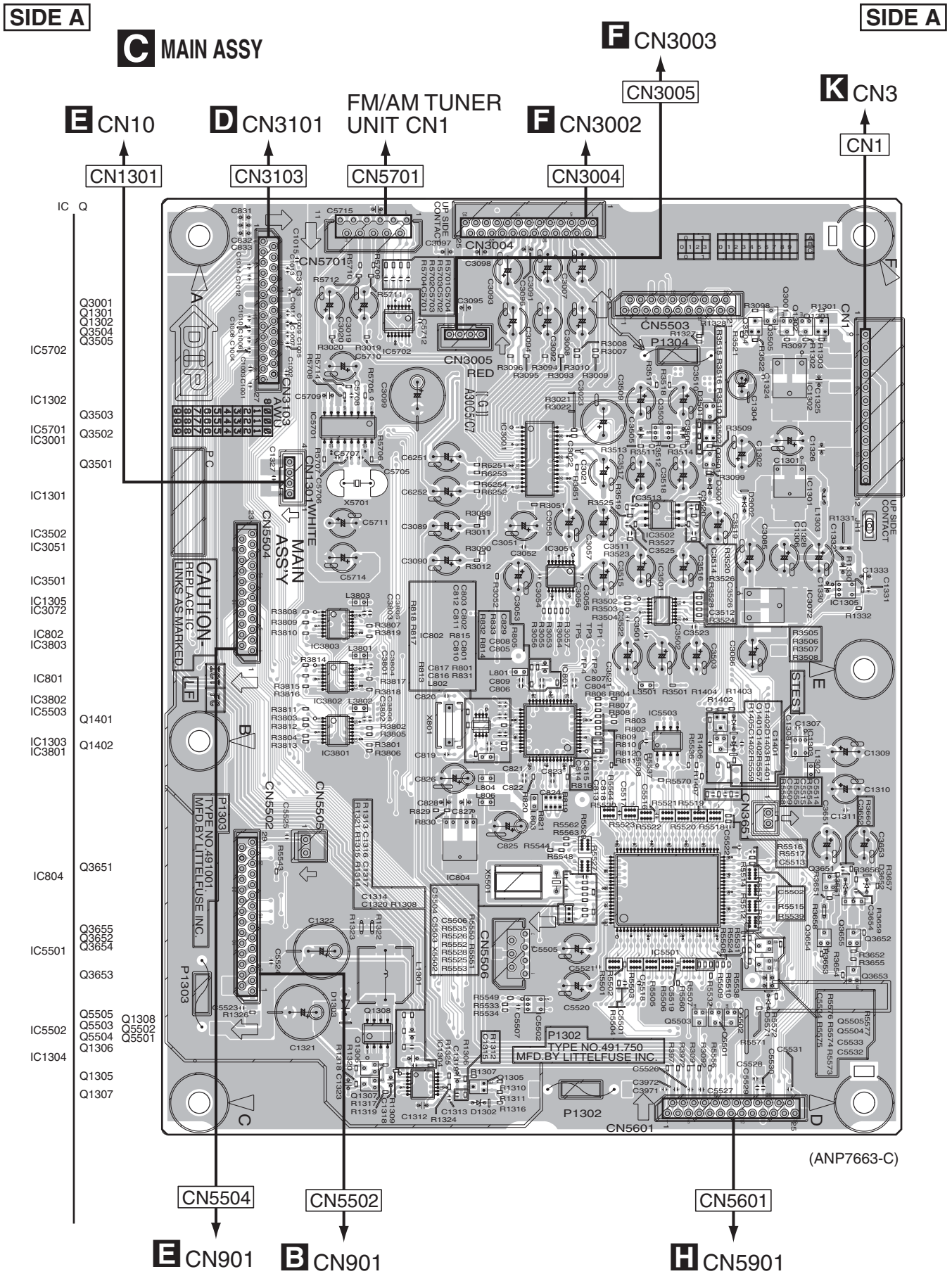
IC Q

Q102
Q101
Q732
Q201
IC203
IC205
IC451
IC202
IC401

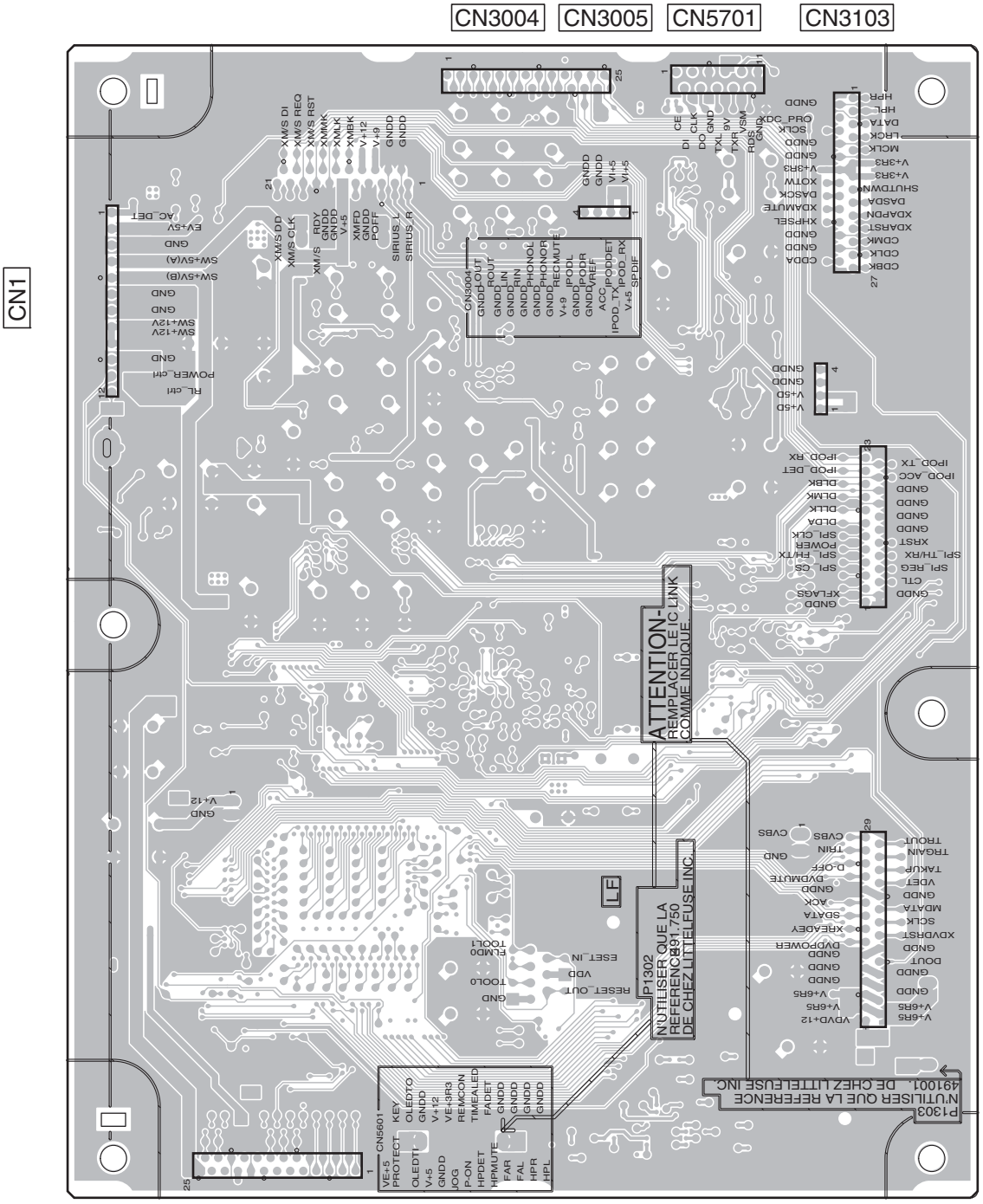


(ANP7583-A)

11.3 MAIN ASSY



C MAIN ASSY



(ANP7663-C)

11.4 AMP ASSY

SIDE A

SIDE A

K CN2

C CN3103

B CN953

D AMP ASSY

CN3201

CN3101

CN3102

IC Q

IC3901

IC3101

IC3902
IC3903

IC3201
IC3301

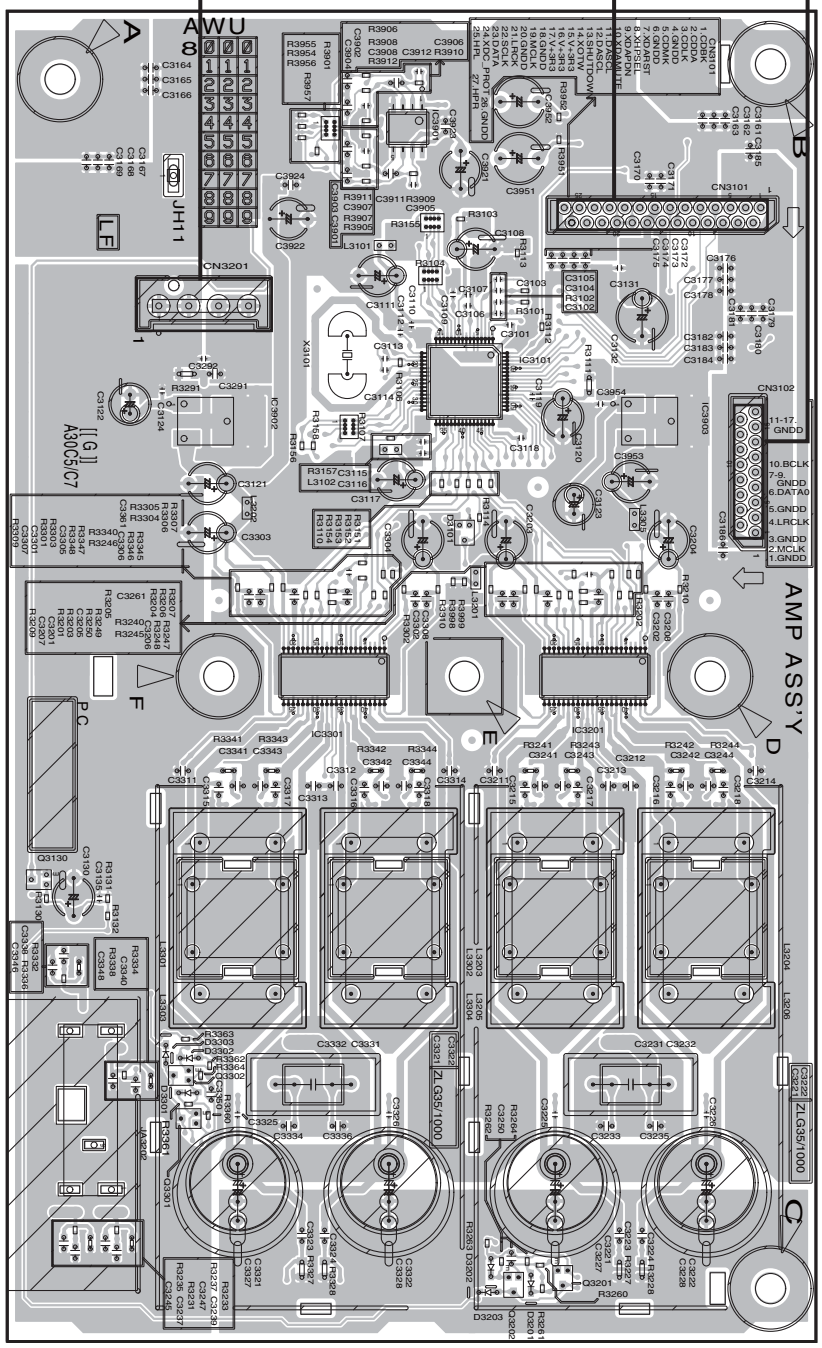
Q3130

Q3302

Q3301

Q3201

Q3202



(ANP7663-C)

D

D

SIDE B

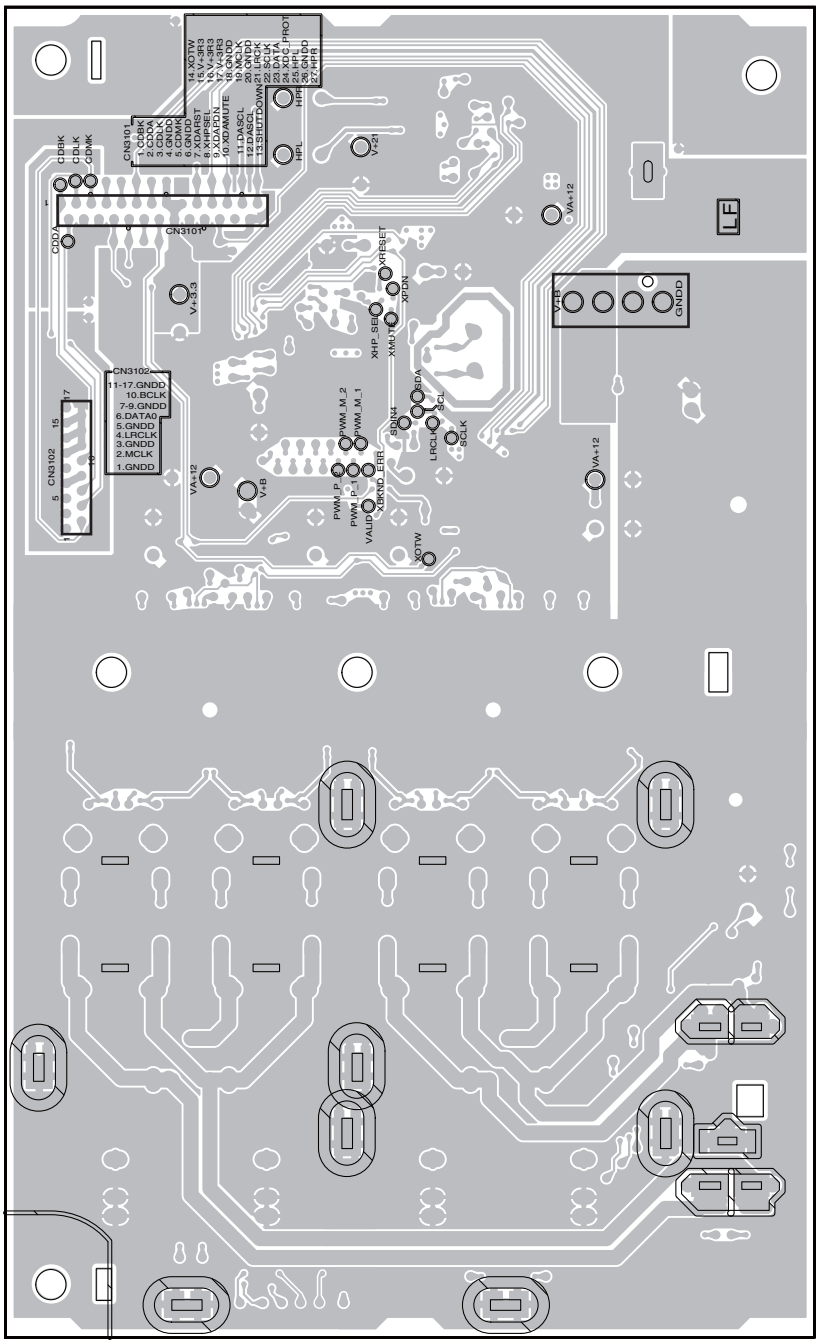
SIDE B

D AMP ASSY

CN3101

CN3201

CN3102



(ANP7663-C)

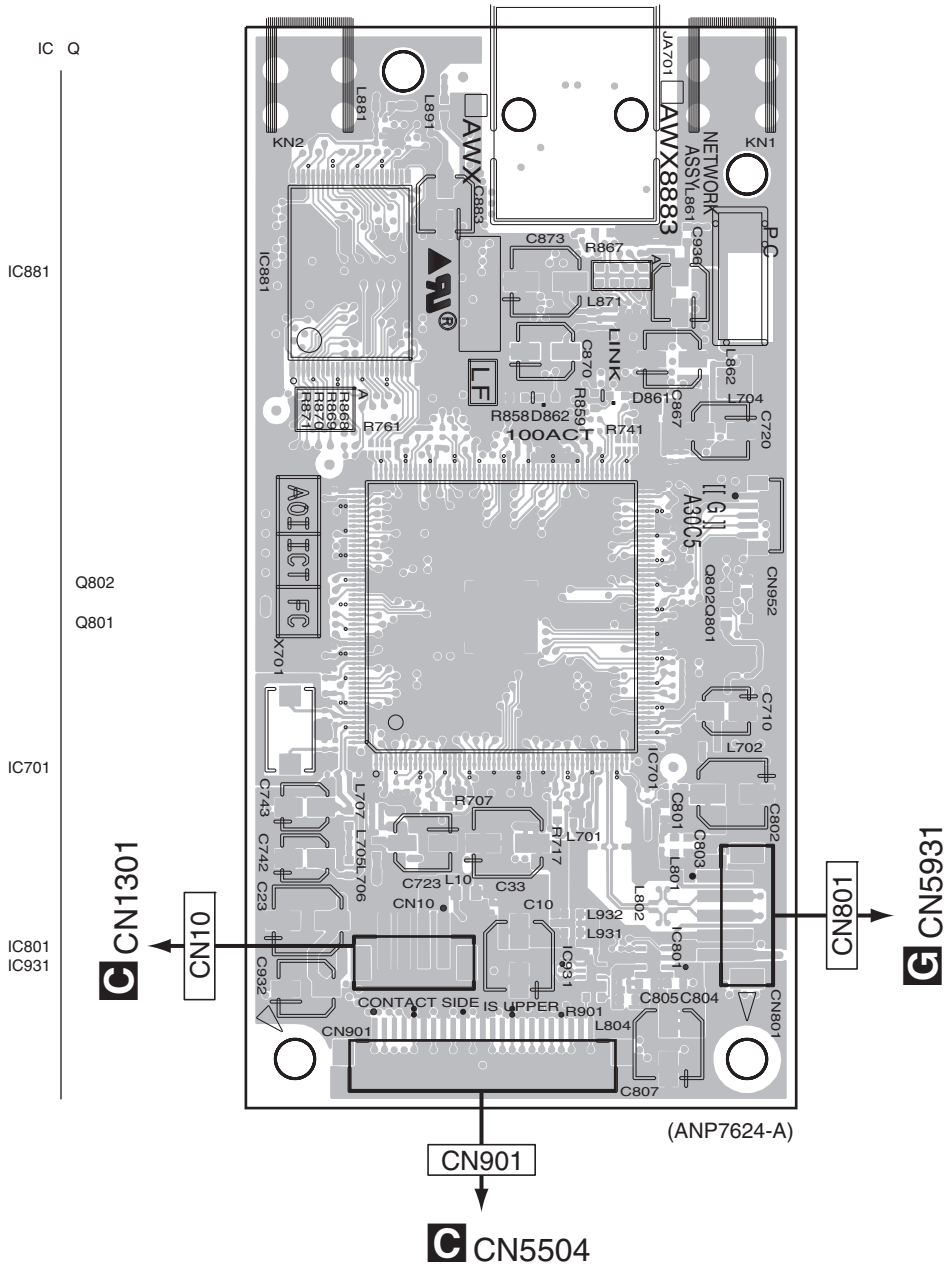
5 6 7 8

11.5 NETWORK ASSY

SIDE A

SIDE A

E NETWORK ASSY



E

E

SIDE B

SIDE B

A

E NETWORK ASSY

B

IC Q

IC891

IC861

C

IC911

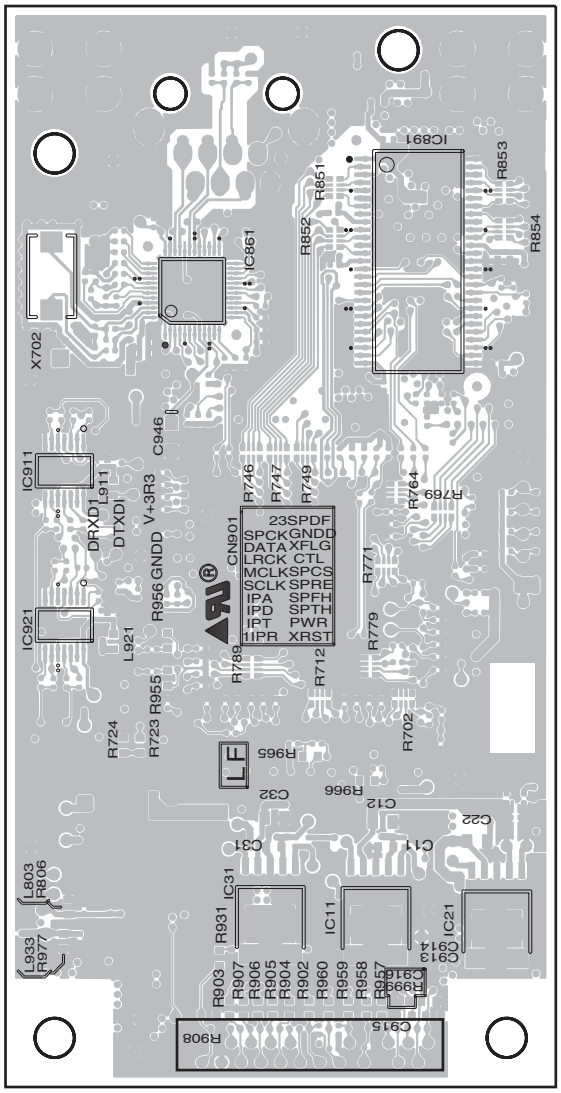
IC921

D

IC31

IC11

IC21



(ANP7624-A)

CN901

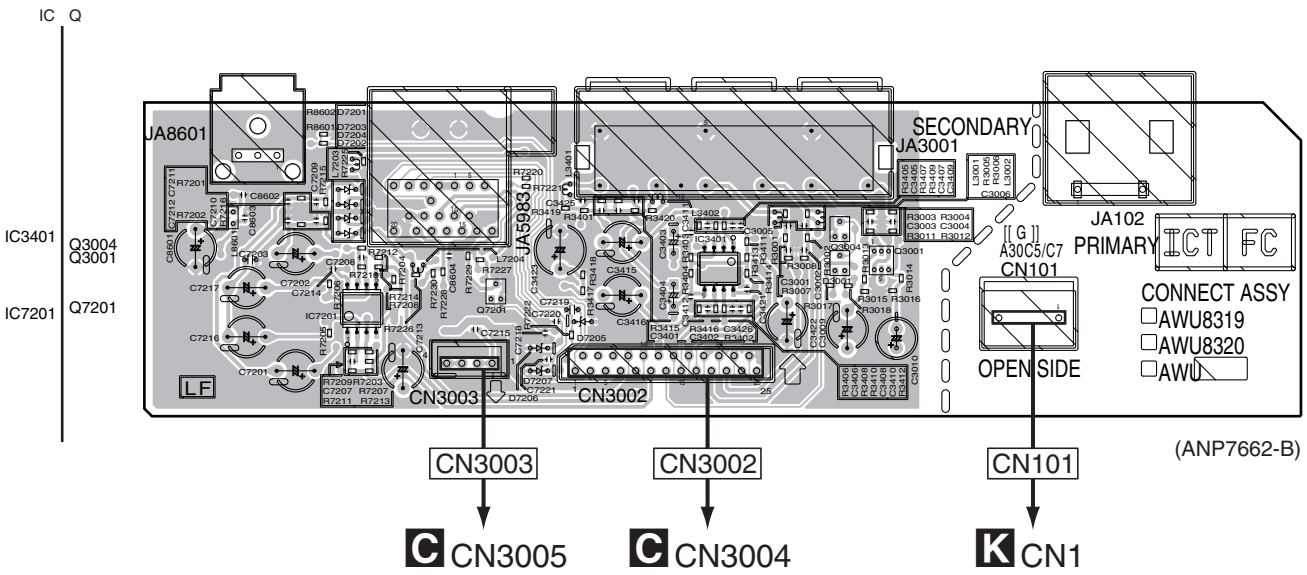
E

F

11.6 CONNECTOR ASSY

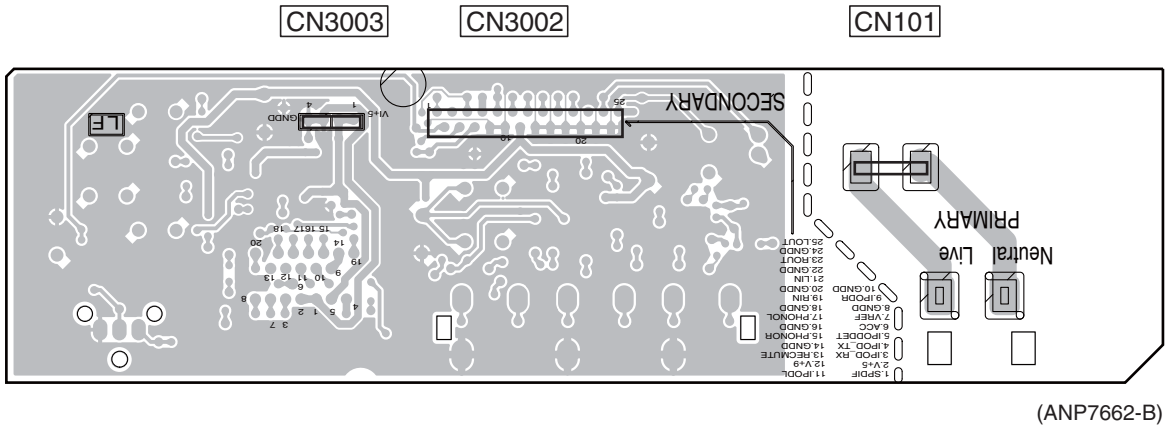
SIDE A **SIDE A**

F CONNECTOR ASSY



SIDE B **SIDE B**

F CONNECTOR ASSY



11.7 FRONT ASSY

SIDE A

SIDE A

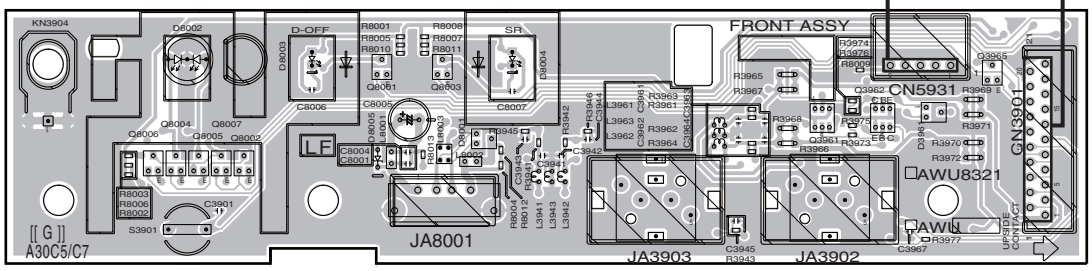
G FRONT ASSY

E CN801 **H** CN1952

CN5931 CN3901

IC Q

Q3965
Q8001
Q3962 Q8003
Q8004 Q8007
Q8006 Q8005
Q8002 Q3961

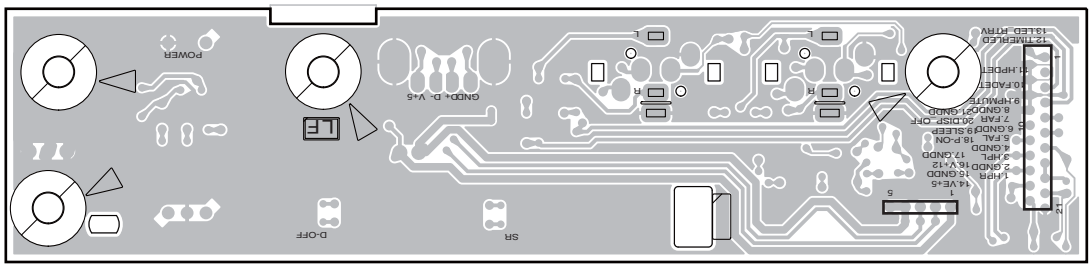


(ANP7662-B)

SIDE B

SIDE B

G FRONT ASSY



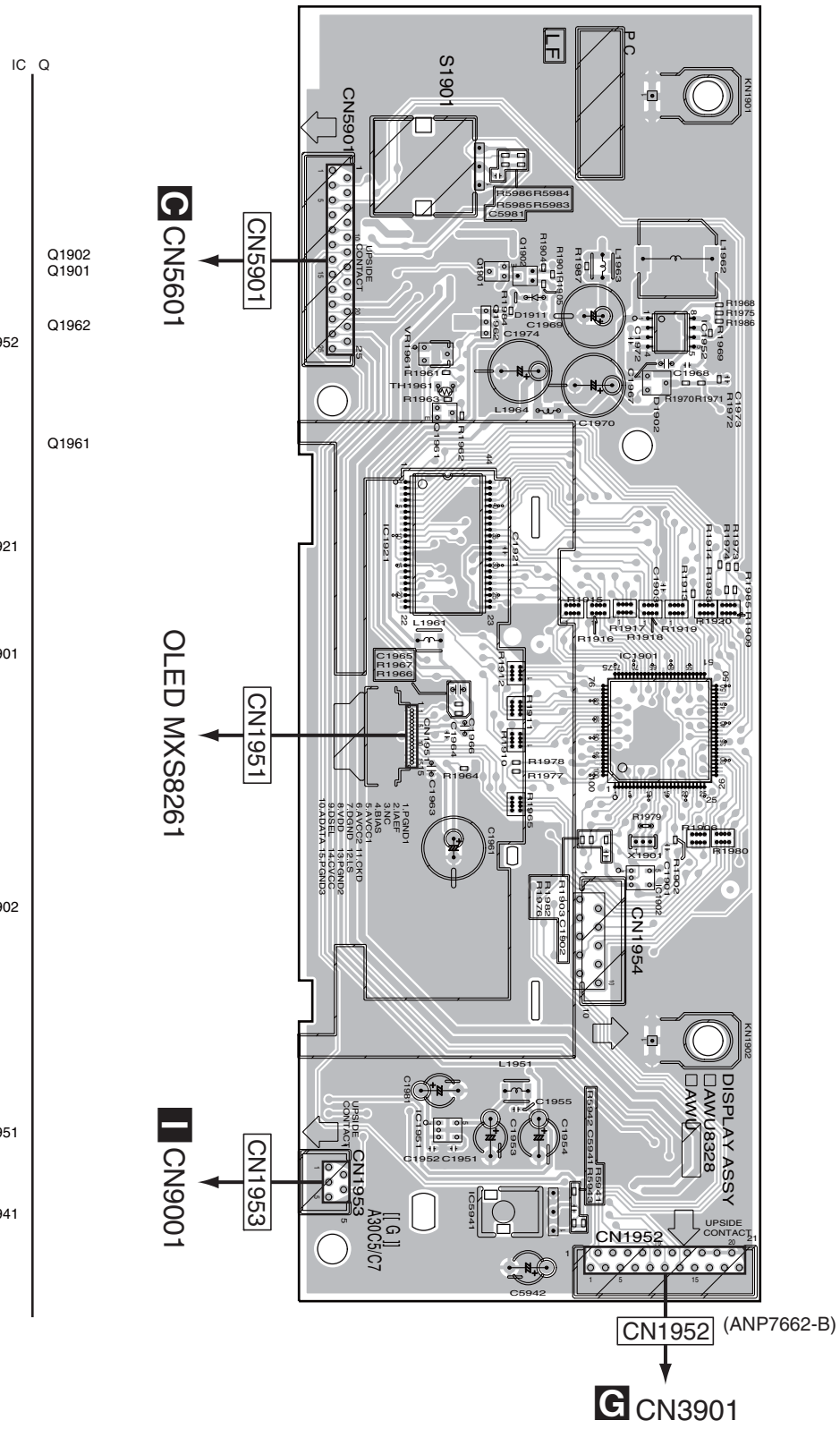
(ANP7662-B)

11.8 DISPLAY ASSY

SIDE A

SIDE A

H DISPLAY ASSY

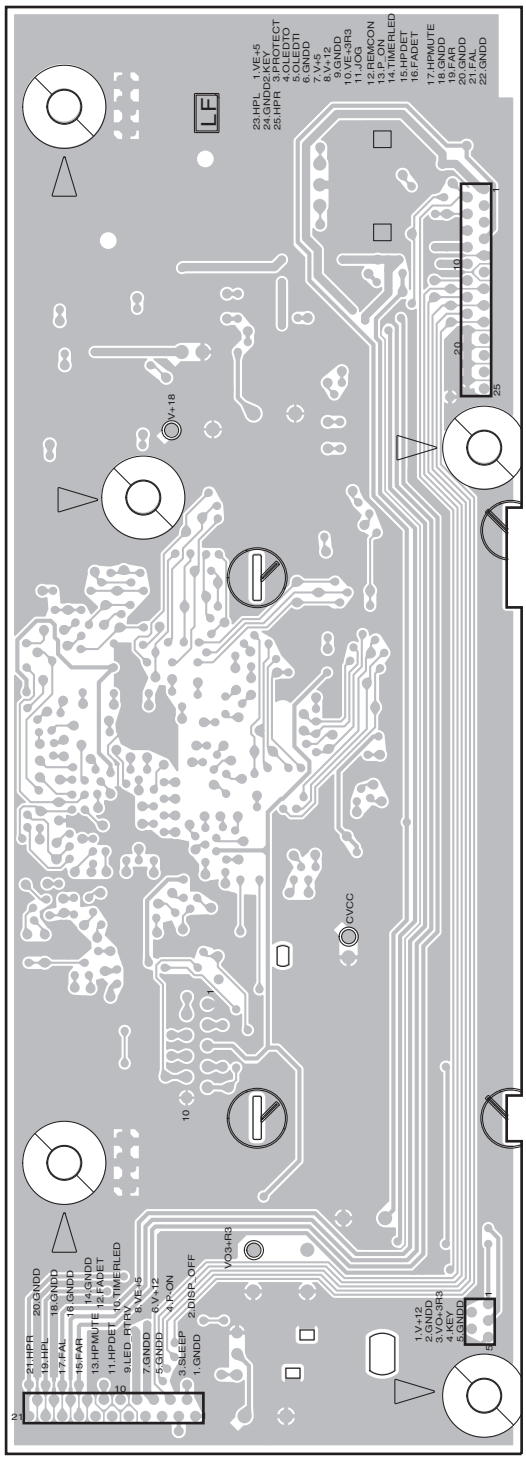


SIDE B

SIDE B

A B C D E F

H DISPLAY ASSY



(ANP7662-B)

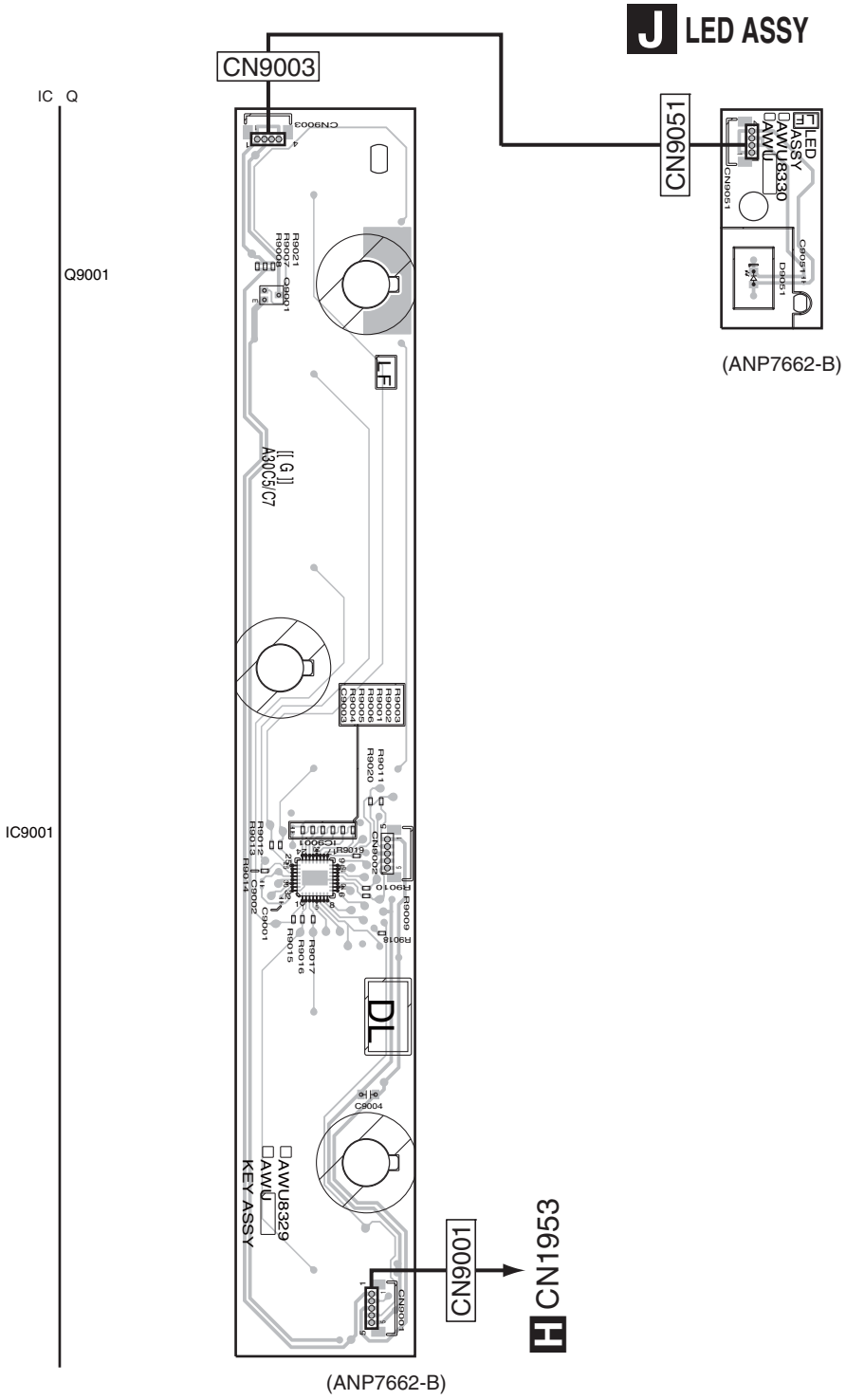
11.9 KEY and LED ASSYS

SIDE A

SIDE A

I KEY ASSY

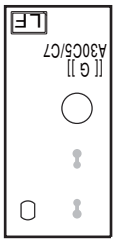
J LED ASSY



SIDE B

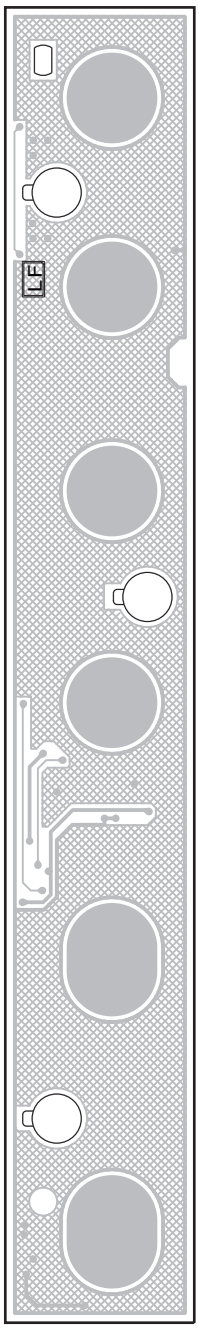
SIDE B

J LED ASSY



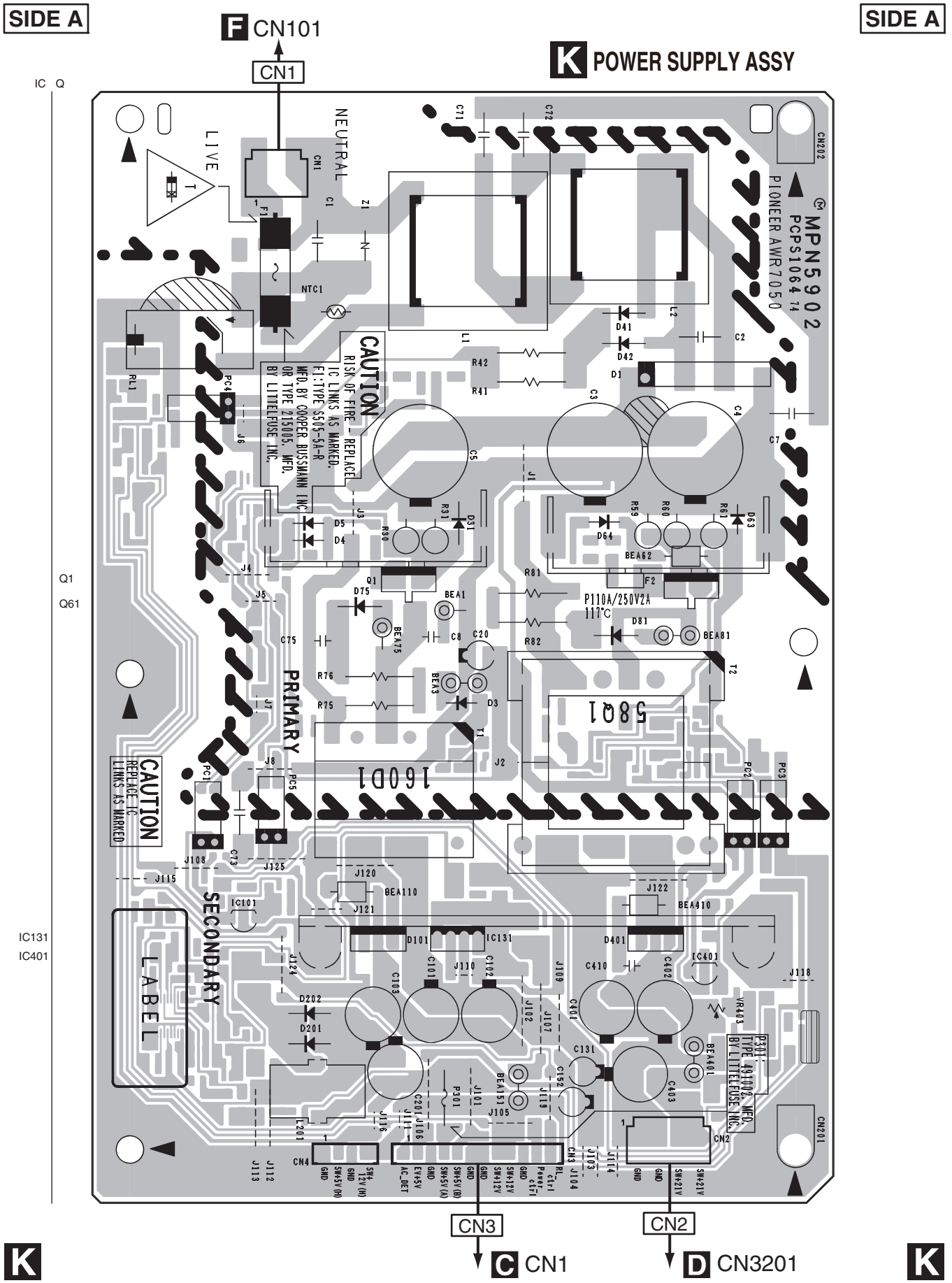
(ANP7662-B)

I KEY ASSY



(ANP7662-B)

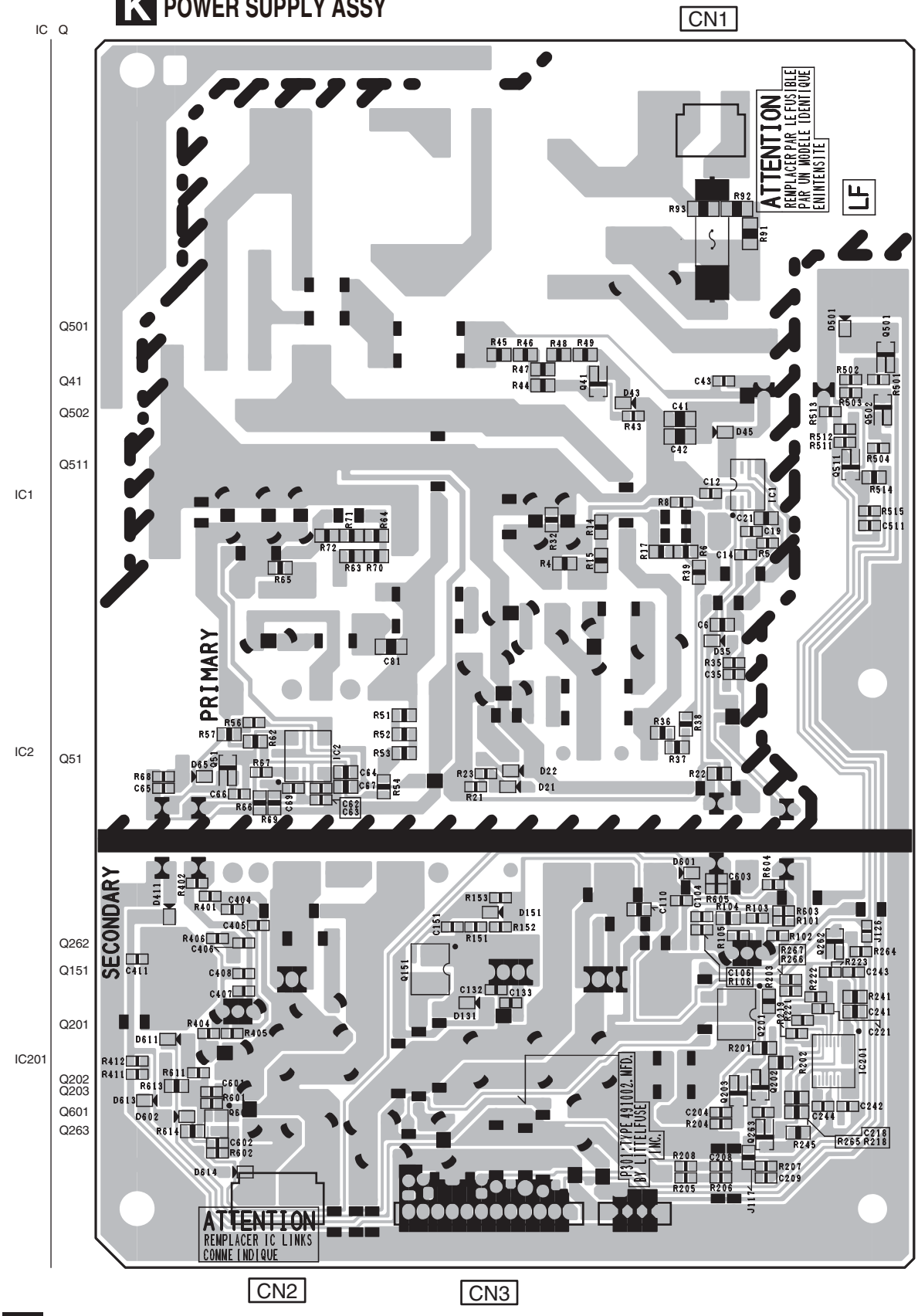
11.10 POWER SUPPLY UNIT



SIDE B

SIDE B

POWER SUPPLY ASSY



12. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*

● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω → 56 × 10[1] → 561 ..... RD1/4PU 5 6 1 J
47 kΩ → 47 × 10[3] → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 kΩ → 562 × 10[1] → 5621 ..... RN1/4PC 5 6 2 1 F

● *Meaning of the figures and others in the parentheses in the parts list.*

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.
IC 301 (A, 91, 111) IC NJM2068V

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP	1	..LOAB ASSY	VWG2346
	1	..DVDM ASSY	AWM8099
	1	..MAIN ASSY	AWM8112
	2	..MAIN ASSY	AWU8322
	2	..AMP ASSY	AWU8326
	1	..NETWORK ASSY	AWX9240
	1	..COMPLEX ASSY	AWM8109
	2	..CONNECTOR ASSY	AWU8319
	2	..FRONT ASSY	AWU8321
	2	..DISPLAY ASSY	AWU8328
	2	..KEY ASSY	AWU8329
	2	..LED ASSY	AWU8330
⚠	1	..POWER SUPPLY UNIT	AWR7050
	1	..FM/AM TUNER UNIT	AXX7248

A LOAB ASSY

MISCELLANEOUS

Mark	No.	Description	Part No.
	S 101		VSK1011
	CN 601	CONNECTOR	S5B-PH-K
	CN 602	CONNECTOR	S2B-PH-K

B DVDM ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC 101		BD7995EFS
	IC 201		MT1389EE/B2-L
	IC 202		K4S641632K-UC75
	IC 203		AYW7244
	IC 204		S-24CS04AFJ
	IC 205		TC7SH08FUS1
⚠	IC 711		MM1661JH
⚠	IC 731		R1224N102H
⚠	IC 751		MM1565AF
	Q 101,701,821,881		2SA1576A
	Q 102,702,801		DTC124EUA
	Q 304		2SC4081
	Q 305		UM5K1N
	Q 307,308		HN1A01F
	Q 506		DTC114YUA
⚠	Q 732		RSQ035P03
	D 731,733,821,852		1SS355
	D 732		RSX201L-30
	D 801		UDZS4R7(B)
	D 861,862,881		1SS355

MISCELLANEOUS

Mark	No.	Description	Part No.
	L 731	POWER INDUCTOR(22U)	DTL1099
	L 732	POWER INDUCTOR	ATH7011
	L 751	INDUCTOR	CTF1395
	L 901	INDUCTOR	CTF1334
	L 931	INDUCTOR	CTF1384
	X 202	CRYSTAL OSCILLATOR (27 MHz)	ASS7075
	CN 101	CONNECTOR	CKS5045
	CN 102	12P CONNECTOR	AKN7031
	CN 103	04P CONNECTOR	RKN1045
	CN 104	CONNECTOR	AKM1291
	CN 901	29P CONNECTOR	VKN1321
	CN 953	CONNECTOR	CKS3885

RESISTORS

Mark	No.	Description	Part No.
	R 131-136		RS1/10S4R7J
	R 151,153		RS1/10S1R0J
	R 152,154		RS1/10S1R8J
	R 200,207-209,217		RS1/10S0R0J
	R 225		RAB4C330J
	R 279		RS1/16S5600F
	R 281,301-303,500		RS1/10S0R0J
	R 590,765,1001-1003		RS1/10S0R0J
	R 732		RS1/10S100J
	R 736		RS1/16S1802F
	R 737		RS1/16S2702F
	R 738		RS1/16S1502F
	Other Resistors		RS1/16S###J

CAPACITORS

Mark	No.	Description	Part No.
	C 101,734,739,761		CEVW101M16
	C 102-104,121,140		CKSRYB105K10
	C 131,204,205,207		CKSRYB104K25
	C 132		VCH1252
	C 144-146,208,210		CKSRYB222K50

Mark	No.	Description	Part No.
C	151-153,226,250		CKSRYB103K50
C	161,230,267,296		CKSRYB102K50
C	201,202,237,281		CEVW221M4
C	203,206,215		CEVW470M16
C	209,213,214,216		CKSRYB104K25
C	211,212		CCSRCH560J50
C	217,220,222-225		CKSRYB104K25
C	219		CKSRYB152K50
C	227		CCSRCH221J50
C	228,231-236		CKSRYB104K25
C	239-241,244-246		CKSRYB104K25
C	243,261,263,282		CKSRYB105K10
C	249,253,257,260		CKSRYB104K25
C	254		CCSRCH391J50
C	255		CKSRYB474K10
C	256		CEVW100M16
C	258,259		CKSRYB473K50
C	262,264,266,268		CKSRYB104K25
C	265		CCSRCH220J50
C	269		CKSRYB333K16
C	271-273,283-288		CKSRYB104K25
C	289,298,343-347		CKSRYB105K10
C	290,371,372,736		CKSRYB104K25
C	299		CKSRYB102K50
C	309,310,373,374		VCH1260
C	701		CKSQYB105K16
C	711,751		CKSRYB105K10
C	712,752		CCSRCH471J50
C	713,753		CKSQYB225K10
C	732,733,735,738		DCH1165
C	737		CCSRCH121J50
C	801		CKSRYB104K25

C MAIN ASSY

SEMICONDUCTORS

IC	801		DSPB56374AE
IC	802		TC7WU04FU
IC	804		BD00KA5WFP
IC	1301		BA90BC0FP
IC	1302		NJM2845DL1-33
IC	1303		NJM2872BF33
IC	1304		BD9300FV
IC	3001		BD3841FS
IC	3051		AK5358AET
IC	3072		NJM78M05DL1A
IC	3501		PCM1742KE
IC	3502		NJM4565M
IC	3802,3803		TC74VHC157FTS1
IC	5501		AYW7215
IC	5502		PST8228N
IC	5503		S-93C46BD0I-J8T1
IC	5701		LC72725KM
IC	5702		TC74VHC08FTS1
Q	1301,1305,1401,3502		2SA1576A
Q	1302,3001,3501,5504		2SC4081
Q	1306		2SC4097
Q	1307		2SA1577
⚠ Q	1308		RSS050P03
Q	1402,3505		DTC124EUA
Q	3503		IMX9
Q	3504		2SA1576A
Q	5503		DTC114YUA
Q	5505		2SC4081
D	1302		UDZS8R2(B)
D	1303		RSX201L-30
D	1402,3001,3002,5571		1SS352
D	3501		DAP202U

MISCELLANEOUS

L	801,802	CHIP SOLID INDUCTOR	QTL1013
L	803,804	CHIP SOLID INDUCTOR	ATL7002
L	806	CHIP SOLID INDUCTOR	ATL7002
L	1301	POWER INDUCTOR	ATH7048
L	1302,3501	CHIP SOLID INDUCTOR	QTL1013
L	3801,3803	CHIP SOLID INDUCTOR	QTL1013
X	801	CRYSTAL RESONATOR (24.576 MHz)	XSS3003
X	5501	CRYSTAL RESONATOR (32 KHz)	VSS1197
X	5502	CERAMIC RESONATOR (20 MHZ)	VSS1186
X	5701	CRYSTAL RESONATOR (4.332 MHZ)	ASS7004
CN	1301	PLUG(4P)	KM200NA4
CN	3004	25P CONNECTOR	VKN1285
CN	3005	PLUG(4P)	KM200NA4R
CN	3103	27P CONNECTOR	VKN1258
CN	5502	29P CONNECTOR	VKN1260
CN	5504	23P CONNECTOR	VKN1254
CN	5506	CONNECTOR	CKS3372
CN	5601	25P CONNECTOR	VKN1256
CN	5701	CONNECTOR	CKS3376
JH	1	PCB BINDER	VEF1040
⚠ P	1302	PROTECTOR(750MA)	AEK7062
⚠ P	1303	PROTECTOR(1A)	AEK7064

RESISTORS

R	821		RAB4C470J
R	829		RS1/16SS3302F
R	830		RS1/16SS2202F
R	1314		RS1/16SS4701F
R	1315		RS1/16SS2201F
R	1321		RS1/16SS1802F
R	1322,1323		RS1/8SQ561J
R	1331		RS1/16S0R0J
R	5501,5503,5505-5507		RAB4CQ101J
R	5511-5514,5518-5523		RAB4CQ101J
R	5527,5529,5530		RAB4CQ101J
Other Resistors			RS1/16SS###J

CAPACITORS

C	801-806,814,816		CCSSCH471J16
C	807-813,815,817		CKSSYB104K10
C	818,821,823		CCSSCH471J16
C	819,820		CCSSCH8R0D50
C	822,824,1307,1313		CKSSYB104K10
C	825,826,5520		ACH7278
C	827,828,1319		CKSRYB105K16
C	829,832		CKSRYB103K50
C	831,3095,5715		CKSRYB102K50
C	833		CKSRYB104K50
C	1301,3007,3008,3019		CEAT100M50
C	1302		CEAT470M16

Mark	No.	Description	Part No.
C	1304		CEHAZL100M50
C	1308,1311,1401,3022		CKSSYB103K25
C	1309,1310,3085,5505		CEAT1R0M50
C	1312,1314		CKSRYB104K16
C	1315,1324		CKSSYB224K6R3
C	1318		CCSRCH331J50
C	1321,1322		CEHAZL471M16
C	1325		CKSRYB334K10
C	1326		CKSRYB474K16
C	1327,3133,5501,5518		CKSSYB102K50
C	3020,3051,3055,3057		CEAT100M50
C	3023		CEAT471M10
C	3052,3054,3056,3501		CKSSYB104K10
C	3053		ACH7291
C	3058,3089-3092,3503		CEAT100M50
C	3086		CEHAZL470M25
C	3099		CEHAZL221M35
C	3502,3521		CEAT101M10
C	3505,3506		CCSRCH102J50
C	3509,3510,3515-3519		CEAT100M50
C	3511,3512,5502		CCSSCH221J50
C	3513,3514,5701,5704		CCSSCH101J50
C	3520,3523,3804,3805		CKSSYB104K10
C	3522,3801,3803,5506		CKSSYB103K25
C	5503,5504		CCSSCH100D50
C	5508,5712		CKSSYB104K10
C	5509,5513-5517,5521		CKSSYB103K25
C	5519		CKSSYB102K50
C	5522,5707		CKSSYB103K25
C	5532		CKSRYB105K10
C	5705,5706		CCSSCH270J50
C	5708		CKSSYB472K25
C	5709		CKSRYB561K50
C	5710		CEAT100M50
C	5711		CEAT470M25

D AMP ASSY

SEMICONDUCTORS

IC	3101		TAS5504APAG
IC	3201,3301		TAS5142DDV
IC	3901		NJM2068MD
IC	3902,3903		NJM78M12DL1A
Q	3130		2SC4081
Q	3201,3202,3301,3302		2SA1576A
D	3101		DAP202U
D	3201-3203,3301-3303		1SS352

MISCELLANEOUS

L	3101,3102	CHIP SOLID INDUCTOR	QTL1013
L	3205,3206,3303,3304	INDUCTOR	ATH7065
JA	3202	SPEAKER TERMINAL 4-P	AKE7092
X	3101	CRYSTAL RESONATOR (13.5MHZ)	ASS7062
CN	3101	27P CONNECTOR	VKN1258
CN	3102	17P CONNECTOR	VKN1248
CN	3201	BOADIN LEAD WIRE	ADX7588
	0	AMP SHIELD HQ(MTL)	ANK7143
JH	11	PCB BINDER	VEF1040

RESISTORS

Mark	No.	Description	Part No.
R	3104		RAB4CQ101J
R	3107		RAB4CQ470J
R	3111		RS1/10S220J
R	3155,3901		RAB4CQ472J
R	3227,3228,3291,3327		RS1/10S3R3J
R	3231,3233,3332,3334		RS1/10SR472J
R	3241-3244,3341-3344		RS1/16S180J
R	3328		RS1/10S3R3J
	Other Resistors		RS1/16SS###J

CAPACITORS

C	3101,3103,3104,3106		CKSSYB104K10
C	3102,3105		CKSSYB103K25
C	3107,3110,3112,3115		CKSSYB104K10
C	3108,3111,3117,3120		ACH7292
C	3109,3124,3225,3226		CKSSYB102K50
C	3113,3114		CCSSCH180J50
C	3116,3118,3119		CKSSYB104K10
C	3121,3953		CEHAZL220M50
C	3161,3164,3172,3179		CKSRYB102K50
C	3162,3165,3173,3180		CKSRYB103K50
C	3163,3166,3174,3181		CKSRYB104K50
C	3186		CKSRYB102K50
C	3201,3202,3205,3207		CKSRYB104K50
C	3203,3204,3303,3304		ACH7292
C	3206,3306,3924		CKSRYB104K16
C	3208,3211-3214,3223		CKSRYB104K50
C	3215-3218,3315-3318		CKSRYB333K25
C	3221,3222,3321,3322		ACH7271
C	3224,3245,3247,3301		CKSRYB104K50
C	3231,3332		ACH7281
C	3233,3235,3237,3239		CKSRYB103K50
C	3241-3244,3341-3344		CCSRCH331J50
C	3250,3291,3334,3336		CKSRYB103K50
C	3292,3325,3326,3954		CKSSYB102K50
C	3302,3305,3307,3308		CKSRYB104K50
C	3311-3314,3323,3324		CKSRYB104K50
C	3338,3340,3350		CKSRYB103K50
C	3346,3348,3923		CKSRYB104K50
C	3901-3904		CCSRCH681J50
C	3905-3908		CCSSCH181J50
C	3951,3952		CEAT221M16

E NETWORK ASSY

SEMICONDUCTORS

⚠ IC	11		NJM2846DL3-33
⚠ IC	21		NJM2846DL3-18
⚠ IC	31		NJM2886DL3-33
IC	701		DM850E
IC	801		AAT4618IGV-0.5-1
IC	861		RTL8201CP-LF
NSP IC	881		AYW7238
IC	891		HY57V641620FTP-6
IC	911		TC74VHC08FTS1
Q	801		DTA143EUA
Q	802		DTC143EUA
D	861		SML-310YT
D	862		SML-310PT

Mark	No.	Description	Part No.
MISCELLANEOUS			
L	10	CHIP BEEDS FILTER	BTX1040
L	701,702,861,862	INDUCTOR	CTF1357
L	704-707	CHIP FERRITE BEADS	ATF1211
L	801,803	CHIP FERRITE BEADS	VTL1169
L	802	COIL	VTH1043
L	871,881,891,911	INDUCTOR	CTF1357
L	933	CHIP FERRITE BEADS	VTL1169
L	958	INDUCTOR	CTF1384
JA	701	RJ45C ONNECTOR TRNS	AKP1307
KN	1,2	SCREW PLATE	VNE1948
X	701	CRYSTAL RESONATOR (24.576 MHz)	XSS3003
X	702	CRYSTAL RESONATOR	ASS7084
CN	10	CONNECTOR	AKM1275
CN	801	CONNECTOR	AKM1276
CN	901	23P CONNECTOR	VKN1315
CN	952	5P CONNECTOR	VKN1374
NSP	0	ID LABEL ASSY	AXW7015
RESISTORS			
R	702,712,764,779		RAB4CQ473J
R	723		RS1/16S5101F
R	724		RS1/16S3900F
R	741,761,769,771		RAB4CQ220J
R	746,747,749,789		RAB4CQ330J
R	851-854		RAB4CQ330J
R	858,859		RS1/16S121J
R	867		RS1/16S2001F
R	868-871		RS1/16S49R9F
R	902-907		RS1/16S101J
R	908,999		RS1/16S0R0J
R	955-957,959,960		RS1/16S220J
R	965		RS1/16S220J
Other Resistors			RS1/16SS###J
CAPACITORS			
C	10		CEVW470M16
C	11,31,801		CKSRYB104K16
C	12,32		CKSQYB225K10
C	21,701-706,708		CKSSYB104K10
C	22		CKSQYB475K6R3
C	23		CEVW221M4
C	33		CEVW101M6R3
C	709,711-717,719		CKSSYB104K10
C	710,742,743		CEVW100M16
C	718,721,860,866		CKSSYB471K50
C	720,867		CEVW220M16
C	722,724-734		CKSSYB104K10
C	723,936		CEVW470M6R3
C	735		CKSSYB102K50
C	736-739,861-865		CKSSYB104K10
C	740,741		CCSSCH120J50
C	803-805		CKSRYB104K16
C	868,871,872,874		CKSSYB104K10
C	869,881,895		CKSSYB471K50
C	873		CEVW330M16
C	882,891-894,900		CKSSYB104K10
C	897-899,912		CKSSYB471K50
C	911		CKSSYB104K10
C	934,935,937,938		CKSSYB103K16
C	939,940		CCSSCH180J50
C	946		CSZS330M6R3

F CONNECTOR ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
IC	3401		BA4560RF
IC	7201		NJM4565M
Q	3001		IMX9
Q	3004		DTA124EUA
D	3001		DAP202U
D	7201-7207		UDZS6R2(B)
MISCELLANEOUS			
L	3401,3402	INDUCTOR	CTF1379
JA	102	AC INLET 1P	XKP3084
JA	3001	JACK	VKB1129
JA	5983	20P SOCKET	AKP7226
CN	101	CONNECTOR	B2P3-VH
CN	3002	25P CONNECTOR	VKN1256
CN	3003	PLUG(4P)	KM200NA4R
RESISTORS			
R	7227,7228		RS1/16SS7502F
R	7229,7230		RS1/16SS4992F
Other Resistors			RS1/16SS###J
CAPACITORS			
C	3001-3006		CCSSCH221J50
C	3009,3010,7201,7202		CEAT100M50
C	3401,3402,3425,3426		CKSSYB102K50
C	3403,3404		CSZS100M6R3
C	3405,3406		CKSSYB822K16
C	3407-3410		CKSSYB122K50
C	3415,3416		CEAT470M16
C	3421,7215		CKSSYB103K25
C	3422		CEAT101M16
C	3423		CEAT471M6R3
C	7203		CKSRYB103K50
C	7207,7208,7214		CKSSYB331K50
C	7209-7212		CKSSYB102K50
C	7213,7216,7217		CEAT100M50
C	7219		CKSRYB471K50
C	7220,7221		CKSSYB471K50

G FRONT ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
Q	3961,3962		IMX9
Q	3965,8004,8005		DTA124EUA
Q	8001-8003,8006,8007		DTC143ZUA
D	3961		DAP202U
D	8001		UMZU6.2N
D	8002		VRPG5615S
D	8003,8004		NESW007-4436
MISCELLANEOUS			
L	3941,3942,3961,3962	INDUCTOR	CTF1306
L	8001	CHIP SOLID INDUCTOR	ATL7002
L	8003	COIL	VTH1047
JA	3902,3903	MINITURE JACK	AKN7005
JA	8001	JACK	XKB3056

Mark	No.	Description	Part No.
KN	3904	WRAPPING TERMINAL	VNF1084
S	3901	SWITCH	VSG1024
CN	3901	CONNECTOR	VKN1281
CN	5931	L-PLUG(5P)	KM200NA5L

RESISTORS

R	3965-3972		RS1/10S680J
	Other Resistors		RS1/16SS###J

CAPACITORS

C	3901,3945,3967		CKSSYB103K25
C	3941-3944		CKSSYB471K50
C	3961,3962		CKSSYB473K16
C	3963,3964		CKSSYB102K50
C	8001,8004,8006,8007		CKSSYB104K10
C	8005		CEAT221M6R3

H DISPLAY ASSY

SEMICONDUCTORS

IC	1901		PEG491A8
IC	1902		PST3228
IC	1921		PD8175A
IC	1951		NJM2872BF33
IC	1952		NJM2374AM
IC	5941		GP1UE27XK
Q	1901		DTC124EUA
Q	1902		2SA1576A
Q	1961		2SC4081
Q	1962		2SD1664
D	1902		RB411D
D	1911		1SS352
TH	1961		CCX1037

MISCELLANEOUS

L	1951,1961	INDUCTOR	CTF1617
L	1962	POWER INDUCTOR	ATH7053
KN	1901,1902	WRAPPING TERMINAL	VNF1084
S	1901	ROTARY ENCODER	ASX7048
X	1901	CERAMIC OSCILLATOR	CSS1616
CN	1951	CONNECTOR	CKS5545
CN	1952	CONNECTOR	VKN1281
CN	1953	5P CONNECTOR	VKN1265
CN	1954	CONNECTOR	9604S-10C
CN	5901	25P CONNECTOR	VKN1285
0		HOLDER HQ(MTL)	ANG7606
0		DOUBLE SIDED TAPE	CNM8673
0		HOLDER MOULD HQ(PLS)	AMR7535
0		OEL UNIT	MXS8261

RESISTORS

R	1909		RAB4CQ473J
R	1910-1912,1915-1920		RAB4CQ101J
R	1965,1980		RAB4CQ101J
R	1966		RS1/16SS3001D
R	1967		RS1/16SS2201D
R	1979		RS1/16S105J
	Other Resistors		RS1/16SS###J

CAPACITORS

C	1901,1903,1921,1951		CKSSYB103K25
C	1902,1952,1964,5941		CKSSYB104K10
C	1953		CEJQ4R7M50
C	1954		CEJQ101M6R3
C	1955		CKSSYB103K25
C	1961,1969		CEAL101M16
C	1963		CKSRYB104K16
C	1965-1967		CKSRYB104K50
C	1970		CEHAZL330M50
C	1972		CCSSCH221J50
C	1981,5942		CEJQ470M6R3
C	5981		CKSSYB223K16

I KEY ASSY

SEMICONDUCTORS

Q	9001		DTC143ZUA

MISCELLANEOUS

CN	9001,9002	5P CONNECTOR	VKN1374
CN	9003	4P CONNECTOR	VKN1409

RESISTORS

	All Resistors		RS1/16SS###J

CAPACITORS

C	9001,9003		CKSSYB103K25
C	9002		CKSSYB104K10

J LED ASSY

SEMICONDUCTORS

D	9051		NESW007-4436

MISCELLANEOUS

CN	9051	4P CONNECTOR	VKN1409

CAPACITORS

C	9051		CKSSYB103K25

K POWER SUPPLY UNIT

POWER SUPPLY UNIT has no service part.

FM/AM TUNER UNIT

FM/AM TUNER UNIT has no service part.